CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2005-0008

NPDES PERMIT NO. CA0037575

NAPA SANITATION DISTRICT, NAPA COUNTY

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE ORDER
NPDES PERMIT NO. CA0037575

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

NAPA SANITATION DISTRICT, NAPA COUNTY

FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Regional Water Board, finds that:

1. The Napa Sanitation District, hereinafter referred to as the Discharger, by the Report of Waste Discharge (ROWD) dated August 31, 2004, applied to the Regional Water Board, for reissuance of waste discharge requirements and a permit to discharge secondary-treated wastewater from its treatment facility to the Napa River, a water of the State and the United States, under the National Pollutant Discharge Elimination System (NPDES).

Facility Description

2. The Discharger owns and operates a secondary municipal wastewater treatment plant (the plant) located at the Soscol Water Recycling Facility south of the City of Napa, Napa County. The plant has a dry weather design capacity of 15.4 million gallons per day (mgd). It serves a current population of 75,000 and provides secondary-level treatment for domestic and commercial wastewater collected from the City of Napa and adjacent unincorporated areas. Wastewater from the City of American Canyon (estimated to be 1.0 mgd) was disconnected from the Discharger's wastewater treatment system in September 2002. A map showing the location of the plant is included as **Attachment A**.

3. The U.S. Environmental Protection Agency (U.S. EPA) and the Regional Water Board have classified this Discharger as a major discharger.

Purpose of Order

4. This NPDES permit regulates the discharge of treated wastewater to the Napa River. This discharge was previously governed by Waste Discharge Requirements in Order No. 00-059 adopted on July 19, 2000 and a permit amendment Order No. R2-2002-0111, issued on October 18, 2002 (collectively the previous permit or previous Order).

Treatment Process Description

5. During the wet season (from November 1 through April 30), raw wastewater is treated using screens, aerated grit chambers, and primary clarifiers. After primary clarification the flow is treated in the activated sludge system and/or the oxidation pond system. Up to 8 mgd of wastewater can be treated by the activated sludge system (operational in September 2001) followed by secondary clarification. The oxidation pond system consists of four oxidation ponds followed by polymer coagulation and clarification. The four oxidation ponds also act as flow equalization ponds for peak wet season flows. After secondary treatment, the oxidation pond system effluent is blended with the activated sludge effluent before undergoing chlorination and dechlorination, prior to discharge to the Napa River (see

Attachment B: Treatment Process Flow Diagram). The Discharger is currently conducting a study of the plant to optimize treatment and effluent quality and minimize operating costs. Treatment scenarios being evaluated include full secondary treatment in the oxidation ponds, combinations of secondary treatment with some percentage of flow treated in the activated sludge process and the rest in the oxidation pond process, and full secondary treatment in the activated sludge process with peak wet season flows treated in the oxidation ponds.

6. During the dry season period from May 1 through October 31, wastewater is treated the same way as in the wet season. After secondary treatment, the oxidation pond effluent is blended with activated sludge basin effluent, followed by coagulation, filtration, and chlorination before reclamation. The treated wastewater not used for reclamation remains in the oxidation ponds and does not undergo polymer coagulation and clarification until the wet season begins when the discharge of treated wastewater to the Napa River is allowed.

Discharge Description

7. *Discharge Volume.* The plant presently treats an annual average flow of 9.0 mgd. The plant treated an average dry weather flow of 7.2 mgd, based on the influent flows during the dry weather months from September 2002 through September 2004. The plant discharged an average flow of 13.5 mgd to the Napa River, based on the discharge flows during the wet weather months from November 2002 through April 2004.

8. *Wet Season Discharge and Outfall Location.* During the period from November 1 through April 30, treated wastewater is discharged into the Napa River through a submerged diffuser that is located approximately 160 feet offshore and is 13.4 feet below water surface. The location of the outfall is at latitude 38° 14' 09", longitude 122° 17' 10".

9. *Emergency Dry Season Discharge.* From May 1 through October 31, treated wastewater is either stored in the oxidation ponds or further treated and beneficially reused. This is further discussed in Finding 11 below. Emergency discharge to the River is only allowed with approval by the Executive Officer. The Discharger has historically requested emergency discharges due to oxidation pond capacity-related issues. Since 1995, records show that the plant had nine emergency discharges over the past eight years. The Discharger made repairs to the pond levee in the summer of 2003 restoring the oxidation pond storage capacity, which will minimize the Discharger's requests for emergency dry season discharges.

10. *Effluent Characterization.* A summary of effluent quality is presented in the Fact Sheet. The summary is based on the data from the self-monitoring reports from September 2001 through March 2004 for conventional pollutants, and from September 2001 through April 2004 for most priority pollutants, when there were discharges to the Napa River.

Reclamation Description

11. During the dry season, effluent goes through secondary treatment and then filtration prior to reclamation. The discharges to land are presently governed by Water Reclamation Requirements in Order 96-011, adopted by the Regional Water Board on January 17, 1996. Order No. 96-011 allows discharges of disinfected secondary-treated effluent or tertiary treated water from the Soscol Facility to industrial parks, golf courses, pasture lands, feed and fodder crops, and drip irrigation of vineyards. A detailed list of the Discharger's current reclamation users can be found in the Fact Sheet.

Sludge Handling and Disposal

12. Sludge from the primary clarifiers is pumped to an anaerobic digester. The sludge from the secondary clarifier and filter is thickened in a dissolved air flotation thickener (DAFT), conveyed to the anaerobic digester, then to the sludge holding tank and gas holder, where the gas is used for gas cogeneration, and finally to the sludge belt press for dewatering. Sludge from the flocculation clarifiers is currently sent to the oxidation ponds. Settled sludge is periodically removed from the ponds. The biosolids (digested sludge) are either land applied, stored, or disposed of at a landfill.

Collection System Description

13. The Discharger's wastewater collection system is approximately 245 miles long and contains five pump stations. The stations have adequate alarms, pump capacity and redundancy, and provision for emergency power. The Discharger has a continuous program of maintaining and upgrading these pump stations to ensure reliability of the collection system.

Sanitary Sewer Management Plan

14. On October 15, 2003, the Regional Water Board adopted Order No. R2-2003-0095 establishing a collaborative effort with the Bay Area Clean Water Agencies (BACWA) to develop guidance for sanitary sewer management plans (SSMPs) aimed at reducing or eliminating sanitary sewer overflows, and for uniform, electronic reporting of sanitary sewer overflows to the Regional Water Board to facilitate the Regional Water Board's assessment of the problem regionally. This Order requires the Discharger to fully participate in the BACWA effort, to develop and implement an SSMP once this activity is required by the Regional Water Board or its Executive Officer, and to report sanitary sewer overflows electronically. The requirements for reporting are specified in the Executive Officer's letter (*Requirement for Electronic Reporting of Sanitary Sewer Overflows*) dated November 4, 2004.

Applicable Plans, Policies and Regulations

15. Water quality objectives (WQOs), water quality criteria (WQC), effluent limitations, and calculations contained in this Order are based on the statutes and regulations detailed in Section III of the attached Fact Sheet, which is incorporated here by reference.

Beneficial Uses

16. Beneficial uses for the Napa River, in the vicinity of the discharge, as identified in the *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan) (Table 2-7), and based on known uses of the receiving waters in the vicinity of the discharge, are:

    a. Agricultural Water Supply
    b. Navigation
    c. Contact and Non-Contact Water Recreation
    d. Warm and Cold Fresh Water Habitat
    e. Wildlife Habitat
    f. Preservation of Rare and Endangered Species
    g. Fish Migration and Spawning

Basis For Effluent Limitations

General Basis

Applicable WQOs/WQC

17. The WQOs and WQC applicable to the receiving water of this discharge are from the Basin Plan, the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule, or the CTR), and U.S. EPA's *National Toxics Rule* (the NTR).

    a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in fresh water, lead, mercury, nickel, silver, zinc, and total polynuclear aromatic hydrocarbons (PAHs) in salt water. The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

    b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).

    c. The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this Discharger.

18. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality-based effluent limitations (WQBELs) may be set based on U.S. EPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQC to fully protect designated beneficial uses. The Fact Sheet for this Permit discusses the specific bases and rationales for effluent limitations, and is incorporated as part of this Order.

Basin Plan Amendment

19. On January 21, 2004, the Regional Water Board adopted Resolution No. R2-2004-0003 amending the Basin Plan to (1) update the dissolved WQOs for metals to be identical to the CTR WQC except for cadmium; (2) to change the Basin Plan definitions of marine, estuarine and freshwater to be consistent with the CTR definitions; (3) to update NPDES implementation provisions to be consistent with *the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan, or SIP); (4) to remove settleable matter effluent limitations for POTWs, and other editorial changes. Subsequent to approval by the State Water Resources Control Board (State Water Board) and the Office of Administrative Law (OAL)

(July 22, 2004, and October 4, 2004, respectively), the U.S. EPA approved the amendment on January 5, 2005.

Basin Plan and CTR Receiving Water Salinity Policy

20. The Basin Plan and CTR state that the salinity characteristics (i.e., freshwater versus saltwater) of the receiving water shall be considered in determining the applicable WQOs/WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than 1 part per thousand (ppt) at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or tidally influenced fresh waters that support estuarine beneficial uses, the criteria shall be the lower of the salt- or freshwater criteria (the freshwater criteria for some metals are calculated based on ambient hardness), for each substance.

Receiving Water Salinity

21. The receiving waters for the subject discharge are the waters of the Napa River, which is a tributary of San Pablo Bay. The Discharger has collected receiving water salinity data at several monitoring stations both upstream and downstream of the discharge during November 2001 through December 2004. There are a total of 181 salinity measurements available. Of these, 59 values are below 1 ppt (32.6%), and 53 values are above 10 ppt (29.3%). Therefore, the receiving water is classified as estuarine by both Basin Plan and CTR definition. This is consistent with the fact that the Napa River where the Discharger's outfall is located, is tidally influenced. Therefore, the effluent limitations specified in this Order are based on the lower of the marine and freshwater WQOs and WQC of the Basin Plan, CTR, and NTR.

Receiving Water Hardness

22. Some WQOs and WQC are hardness dependent. The Discharger has collected receiving water hardness data at several monitoring stations both upstream and downstream of the discharge during November 2001 through December 2004. There are a total of 306 hardness measurements available. Of these, only 181 hardness values are paired with salinity measurements on the same sampling dates. When calculating a representative ambient hardness value, the hardness data set was censored (from 181 values to 55 values) to eliminate hardness values above 400 mg/L and to eliminate hardness values obtained when the receiving water salinity was above 1.0 ppt. From the censored data set, the adjusted geometric mean, which is the value that 30% of the measurements fall below, was calculated to be 147 mg/L (see the attached Fact Sheet for more details). Therefore, 147 mg/L is used as the representative ambient hardness value to calculate hardness dependent WQOs/WQC

Technology-Based Effluent Limits

23. Permit effluent limitations for conventional pollutants are technology-based. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility, as required under 40 CFR Part 133.102. Effluent limitations for these conventional pollutants are defined by the Basin Plan. Further, these conventional effluent limits are the same as those from the previous permit for the following constituents:

- Biochemical oxygen demand (BOD)
- BOD percent removal
- Total suspended solids (TSS)
- TSS percent removal

- pH
- Oil and grease, and
- Total chlorine residual

The settleable solids effluent limitations are no longer required per the 2004 Basin Plan amendment.

Water Quality-Based Effluent Limitations (WQBELs)

24. Toxic substances are regulated by WQBELs derived from the Basin Plan, Tables 3-3 and 3-4, the CTR, the NTR, and/or best professional judgment (BPJ) as provided in the Basin Plan and in Section IV of the attached Fact Sheet. WQBELs in this Order are revised and updated from the limits in the previous permit and their presence in this Order is based on an evaluation of the Discharger's data as described below under the Reasonable Potential Analysis. Numeric WQBELs are required for all constituents that have reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given below and in the associated Fact Sheet.

    a. Maximum Daily Effluent Limitations (MDELs) are used in this permit to protect against acute water quality effects. It is impracticable to use weekly average limitations to guard against acute effects. Although weekly averages are effective for monitoring the performance of biological wastewater treatment plants, the MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

    b. NPDES regulations, the SIP, and U.S. EPA's Technical Support Document (TSD) provide the basis to establish MDELs:

        (1) NPDES regulations at 40 CFR Part 122.45(d) state:
        "For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as:

            i. Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works (POTWs); and

            ii. Average weekly and average monthly discharge limitations for POTWs." (Emphasis added.)

        (2) The SIP (p. 8, Section 1.4) requires that WQBELs to protect aquatic life be expressed as MDELs and average monthly effluent limitations (AMELs). For aquatic life-based calculations (only), the SIP indicates MDELs are to be used in place of average weekly limitations for POTWs.

        (3) The TSD states a maximum daily limitation is appropriate for two reasons:

            i. The basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards.

ii. The 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed. A maximum daily limitation would be toxicologically protective of potential acute toxicity impacts.

Receiving Water Ambient Background Data used in Calculating WQBELs

25. By letter dated August 6, 2001, the Executive Officer required the Discharger to conduct additional ambient monitoring pursuant to section 13267 of the California Water Code. On March 5, 2003, a group of five dischargers to the Napa River, including the Discharger, submitted the Collaborative Napa River Receiving Water Evaluation Study. Ambient data collected in 2002, from the Station Napa River near Napa, and additional copper and nickel receiving water data collected during 2001 through 2004 by the Discharger, were used in evaluating background water quality for this Order.

Constituents Identified in the 303(d) List

26. On June 6, 2003, the U.S. EPA approved a revised list of impaired waterbodies prepared by the State. The list (hereinafter referred to as the 2002-303(d) list) was developed in accordance with Section 303(d) of the Federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. The Napa River is a tributary to San Pablo Bay and both are listed as impaired water bodies on the 2002 303(d) List. The 2002 303(d) list includes San Pablo Bay as impaired by: chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. Discharges of conservative pollutants (pollutants that do not break down readily) to Napa River could reach San Pablo Bay through sediment transport or in the water column and may contribute to impairment of San Pablo Bay. The 2002 303(d) list includes the Napa River as impaired by sediment, pathogens, and nutrients.

Dilution Credit

27. In the previous permit, the Regional Water Board granted a 10:1 dilution when calculating WQBELs for discharges to the Napa River during the wet season. This was based on a hydrologic model run by U.S. EPA. The model used an average wet season river flow of 417 cubic feet per second (cfs), which supported a 10:1 dilution. However, a State Water Board Technical Report (see **Attachment G**) issued for State Water Board Order WQ 2001-016[1] stated this dilution evaluation was not in accordance with SIP procedures. Specifically, the State Water Board Technical Report indicated that the 417 cfs flow rate was above critical receiving water flows (e.g., 1Q10 and 7Q10 for aquatic life) allowed for dilution ratio determination by the SIP (Section 1.4.2.1, Table 3). Based on Regional Water Board staff's evaluation, the Regional Water Board finds that there is insufficient evidence to justify any dilution credit at this time. However, this evaluation is based on United States Geological Survey (USGS) Napa River historical flow and the Discharger's effluent flow data, and did not account for effects of Napa River tidal conditions on the mixing zone.

28. Due to the tidal influence of the Bay on Napa River near this discharge and the undefined mixing zone, the Regional Water Board considers the discharge as incompletely mixed. Pursuant to Section 1.4.2.1 of the SIP, for incompletely-mixed discharges, the Discharger may demonstrate that a dilution credit is appropriate by performing mixing zone studies, such as a tracer study, a dye study, a modeling study, or monitoring upstream and downstream of the discharge to characterize the extent of actual dilution. Provision F.4 of this Order requires the Discharger to conduct a mixing zone study

[1] State Water Board Order WQ 2001-016 was a remand order of the previous permit, Order No. 00-059.

to justify an appropriate dilution credit. In the interim, the WQBELs are calculated with no dilution (D=0) and a 10:1 dilution (D=9) for wet season discharges. This expresses the range of wet season WQBELs once the appropriate dilution credit is determined. After the study is submitted and approved by the Executive Officer, the permit may be reopened to include revised WQBELs, as appropriate. The mixing zone information will also be considered in the next permit reissuance.

Dry season Emergency Discharge

29. Due to limited upstream fresh water flows during the dry season period (from May 1 through October 31), the discharge is classified as a shallow water discharge during the dry season. Therefore, no dilution credit is granted (D=0) for calculating WQBELs for dry season discharges. This approach is consistent with the previous permit.

Discharge Prohibition Exception

30. The Basin Plan prohibits the discharge of wastewater which has characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, areas or any immediate tributaries thereof. Discharge of treated wastewater to Napa River is subject to this prohibition.

31. The Basin Plan provides that exceptions to the above prohibition will be considered for discharges where: 1) an inordinate burden would be placed on the Discharger relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability; or, 2) the discharge is approved as a part of a reclamation project; or, 3) it can be demonstrated that net environmental benefits will be derived as a result of the discharge.

32. In addition to the criteria stated above for exceptions, the Basin Plan requires that the Regional Water Board consider the reliability of the Discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water, and the environmental consequences of such discharges.

33. During the dry season, the Discharger currently reclaims treated wastewater for irrigation of golf course, vineyards, and commercial landscaped areas. Treated wastewater is also applied to property owned by the Discharger for disposal purposes. From September 2002 through September 2004, the Discharger reclaimed an average of 3.4 mgd of effluent during the dry season, which is approximately 48% of its annual average dry season flow. The oxidation ponds provide necessary storage for the remaining dry season flow not reclaimed.

34. The Discharger's pond system, utilized for both treatment and storage of wastewater, affords the Discharger a significant volume of storage capacity that can be used for containment of effluent flows during the dry season, or for emergency storage in the event of facility upset. The existence and use of these ponds minimizes the possibility of discharge of untreated or partially treated wastewater to the Napa River.

35. The Regional Water Board finds that the water reuse program implemented by the Discharger complies with the exception provision of the Basin Plan. The Regional Water Board, therefore, continues the exception to the discharge prohibition for wet season discharges to the Napa River for a six-month period each year (November 1 through April 30). This exception is subject to the following conditions. The Discharger shall:

a. Continue to operate all treatment facilities to assure high reliability and redundancy;

b. Continue to implement a source control program as required by the permit;

c. Continue to implement measures to maintain, repair, and upgrade the existing wastewater facilities so as to ensure continued operation and treatment capability in conformance with permit requirements;

d. Continue to promote and encourage beneficial reuse of treated wastewater.

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

36. The Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for San Pablo Bay for the above 303(d)-listed pollutants within the next ten years, with the exception of dioxin and furan compounds. For dioxin and furan compounds the Regional Water Board intends to consider this matter further after U.S. EPA completes its national health reassessment. The Regional Water Board plans to adopt the TMDLs for the Napa River within the term of this Order. Future review of the 303(d) list for San Pablo Bay and the Napa River may result in revision of the schedules and/or provide schedules for other pollutants.

37. The TMDLs will establish waste load allocations (WLAs) and load allocations for point sources and non-point sources, respectively, and will result in achieving the water quality standards for the water body. Depending upon whether the Discharger is found to be impacting water quality in San Pablo Bay and/or the Napa River, the TMDLs may include WLAs for the Discharger. If the TMDLs address the Discharger, the final effluent limitations for this discharge would be based on the applicable WLAs.

38. The following summarizes the Regional Water Board's strategy to collect water quality data and to develop TMDLs:
    a. *Data collection* – The dischargers collectively may assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or WQOs/WQC. The Regional Water Board will require dischargers to characterize the pollutant loads from their facilities into the water quality-limited water bodies. The results will be used in the development of TMDLs, but may also be used to update/revise the 303(d) list and/or change the WQOs/WQC for the impaired water bodies including the San Pablo Bay and/or the Napa River.

    b. *Funding mechanism* – The Regional Water Board has received, and anticipates continued receipt of, resources from federal and state agencies for the development of TMDLs. To ensure timely development of TMDLs, the Regional Water Board intends to supplement these resources by allocating development costs among dischargers through appropriate funding mechanisms.

Interim Limitations and Compliance Schedules

39. Pursuant to Section 2.1.1 of the SIP, "the compliance schedule provisions for the development and adoption of a TMDL only apply when: (a) the Discharger requests and demonstrates that it is infeasible for the Discharger to achieve immediate compliance with a CTR criterion; and (b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the Regional Water Board should consider the Discharger's contribution to current loadings and the Discharger's ability to participate in TMDL

development." As further described in a finding below, the Discharger has requested and demonstrated that it is infeasible to achieve immediate compliance for copper, mercury, cyanide, selenium, and tributyltin. Also, the Discharger has agreed to assist the Regional Water Board in TMDL development through its affiliation with BACWA. The Regional Water Board adopted Resolution No. 01-103, on September 19, 2001, with BACWA, and other parties to accelerate the development of Water Quality Attainment Strategies including the TMDLs for the San Francisco Bay-Delta and its tributaries.

40. The SIP and the Basin Plan authorize compliance schedules in a permit if an existing discharger cannot immediately comply with a new and more stringent effluent limitation. Compliance schedules for limitations derived from CTR or the NTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan WQOs are based on the Basin Plan. Both the SIP and the Basin Plan require the discharger to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule. The SIP and Basin Plan require the following documentation to be submitted to the Regional Water Board to support a finding of infeasibility:

    - Descriptions of diligent efforts the Discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
    - Descriptions of source control and/or pollution minimization efforts currently under way or completed.
    - A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
    - A demonstration that the proposed schedule is as short as practicable.

    The Basin Plan provides for a 10-year compliance schedule to implement measures to comply with new standards as of the effective date of those standards. This provision applies to the objectives adopted in the 2004 Basin Plan Amendment. Additionally, the provision authorizes compliance schedules for new interpretations of other existing standards if the new interpretation results in more stringent limitations.

41. On January 24, 2005 and March 18, 2005, the Discharger submitted a feasibility study (the 2005 Feasibility Study) and a supplemental (**Attachment F**), asserting it is infeasible to immediately comply with the WQBELs, calculated according to SIP Section 1.4, for copper, mercury, cyanide, selenium, and tributyltin. Regional Water Board staff conducted statistical analysis or comparative analysis of recent plant performance data for these pollutants, as further detailed in later findings under the heading Development of Specific Effluent Limitations and also in Section V.g. 5, Table E of the attached Fact Sheet. Based on these analyses, the Regional Water Board concurs that it is infeasible to achieve immediate compliance for these pollutants.

42. a. For limitations based on CTR criteria (copper during wet season), this Order establishes a 5-year compliance schedule until April 30, 2010, and for limitations based on NTR criteria (cyanide during wet weather and selenium), this Order establishes a compliance schedule until April 27, 2010, as allowed by the SIP. Though the previous permit provided for a compliance schedule, that schedule was to collect additional data to enable calculation of WQBELs (SIP Section 2.2.2). These additional data are now available. The Discharger has demonstrated that it is infeasible to immediately comply with the calculated WQBELs. Therefore (pursuant to a different SIP Section 2.2.1), a new compliance schedule is warranted.

b. For dry season discharges, the previous permit (Order No. R2-2002-0111) established a compliance schedule for copper and cyanide until July 31, 2005, or until site-specific objectives (SSOs) are adopted. The SSOs for copper and cyanide are still in development; therefore extension of the compliance schedule is appropriate. This Order extends the compliance deadline to December 31, 2007. This date is five years from when the compliance schedule started in the previous permit, and is within the maximum length allowed by the SIP. Though this Order requires final WQBELs for copper and cyanide to be met starting on January 1, 2008, these WQBELs based on existing WQC appear to be over-protective in consideration of the site-specific objectives (SSOs) being developed for copper and cyanide. It is the Regional Water Board's intent to revisit these WQBELs once the SSOs are established.

c. For limitations based on the Basin Plan WQOs (mercury), this Order establishes compliance schedule until April 27, 2010, or until the Regional Water Board adopts TMDL-based effluent limitation for mercury, therefore, the same interim limitation based on pooled mercury data is continued under this Order until the expiration of this compliance schedule.

43. This Order establishes compliance schedules that extend beyond one year for copper, mercury, cyanide, and selenium. Pursuant to the SIP and 40 CFR 122.47, the Regional Water Board shall establish interim numeric limitations and interim requirements to control these pollutants. This Order establishes interim limitations for copper, mercury, cyanide, and selenium based on the previous permit limitations or existing plant performance. This Order also establishes interim requirements in a provision for development and/or improvement of a Pollution Prevention and Minimization Program to reduce pollutant loadings to the plant, and for submittal of annual reports on this Program.

    Since most compliance schedules exceed the length of the permit (4 years and 11 months), these calculated final limits are intended as points of reference for the infeasibility demonstration and are only included in the findings by reference to the Fact Sheet. Additionally, the actual final WQBELs for these pollutants will very likely be based on either the site-specific objective (SSO) or TMDL/WLA as described in other findings specific to each of the pollutants.

    In addition to interim mercury concentration limitation, this Order establishes interim performance-based mass limitation to maintain the Discharger's current mass loadings of mercury into the Napa River and San Pablo Bay. Mercury is 303(d)-listed bioaccumulative pollutant. The interim performance-based mass limitation is retained from the previous permit.

Antidegradation and Anti-backsliding

44. The limitations in this Order are in compliance with the Clean Water Act Section 402(o) prohibition against establishment of less stringent WQBELs for the following reasons:

    (1) For impairing pollutants, the revised final limitations will be in accordance with TMDLs and WLAs once they are established.

    (2) For nonimpairing pollutants, the final limitations are or will be consistent with current State WQOs/WQC.

    The interim limitations in this Order are in compliance with antidegradation requirements and meet the requirements of the SIP because the interim limitations hold the Discharger to performance levels that will not cause or contribute to water quality impairment or further water quality degradation.

Specific Basis

Reasonable Potential Analysis

45. As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method prescribed in Section 1.3 of the SIP, the Regional Water Board has analyzed the effluent data to determine whether the discharge, which is the subject of this Order, has a reasonable potential to cause or contribute to an excursion above a State water quality standard (reasonable potential analysis or RPA). For all parameters that have reasonable potential, WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the NTR and the CTR.

RPA Methodology

46. The method for determining reasonable potential involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. There are three triggers in determining reasonable potential.

    (1) The first trigger (Trigger 1) is activated when the MEC is greater than or equal to the lowest applicable WQO/WQC, which has been adjusted for pH, hardness (for freshwater WQO/WQC only), and translator data, if appropriate. If the MEC is greater than or equal to the adjusted WQO/WQC, then that pollutant has reasonable potential and a WQBEL is required.

    (2) The second trigger (Trigger 2) is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC (B>WQO/WQC), and either:

        i. The MEC is less than the adjusted WQO/WQC (MEC<WQO/WQC) or

        ii. The pollutant was not detected in any of the effluent samples and all the detection levels are greater than or equal to the adjusted WQO/WQC.

    (3) The third trigger (Trigger 3) is activated if a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC, or effluent and background data are unavailable or insufficient (e.g., all nondetects). A limitation is required only under certain circumstances to protect beneficial uses.

RPA Determinations

47. Regional Water Board staff conducted an RPA based on effluent data collected from September 2001 through April 2004 for most priority pollutants, and receiving water ambient background data collected from September 2001 through December 2004, for priority pollutants using the method prescribed in Section 1.3 of the SIP.

48. The MECs, WQOs/WQC, basis for the WQOs/WQC, background concentrations and reasonable potential conclusions are listed in Table 2 for all constituents analyzed. The RPA results for some of the constituents in the CTR were not determined because of lack of an objective/criteria. (Further details about the RPA can be found in the Fact Sheet.) Based on the RPA methodology in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an

excursion above WQOs/WQC: copper, mercury, nickel, selenium, cyanide, TCDD TEQ (dioxins and furans), and tributyltin.

Table 2. Summary of RPA Results

CTR No.	Constituents	WQO/WQC (µg/L)	Basis[1]	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential (Trigger Type)[2]
1	Antimony	4,300	CTR, hh	0.4	1.7	No
2	Arsenic	36	BP, sw	2.0	34	No
4	Cadmium	1.5	BP, fw H=147	0.1	0.04	No
5b	Chromium (VI)	11	BP, fw	0.7	0.4	No
6	Copper	7.4	CTR, sw T=0.42	13	18.5	Yes (#1)
7	Lead	5.2	BP, fw, H=147	0.3	0.78	No
8	Mercury*	0.025	BP, sw	0.15	0.011	Yes (#1)
9	Nickel*	8.3	BP, sw	4.9	68.7	Yes (#2)
10	Selenium*	5.0	NTR, fw/sw	5	19	Yes (#1)
11	Silver	2.2	BP, sw	0.3	<0.02	No
12	Thallium	6.3	CTR, hh	0.08	0.3	No
13	Zinc	86	BP, sw	30	10	No
14	Cyanide	1.0	NTR, sw	20	0.363	Yes (#1)
	TCDD TEQ*	1.4×10^{-8}	BP, narrative	2×10^{-9}	3.68×10^{-8}	Yes (#2)
	CTR#s 17-126	Various or NA	CTR & NTR, hh	Non-detect, less than WQC, or no WQC	Less than WQC or Not Available	No or Undetermined[3]
	Tributyltin	0.0074	BP, narrative	0.0226	0.00143	Yes (Trigger #1)
	Total PAHs	15	BP, sw	0[4]	0[4]	No

* = Constituents on 303(d) list

[1] RPA based on the following: BP = Basin Plan; CTR = California Toxics Rule; NTR=National Toxics Rule; sw = saltwater; fw = freshwater; hh = human health; H = ambient hardness value, 147 mg/L as $CaCO_3$; T = translator to convert dissolved to total copper.

[2] Trigger type is as defined in Finding 46 above.

[3] Undermined due to lack of WQOs/WQC.

[4] The total PAHs concentration was calculated using 16 individual PAH concentrations. Since all 16 individual PAH measurements for both the effluent and ambient background are non-detect, the total PAHs concentration was determined to be zero.

49. *Reasonable Potential and WQBELs for Dry Season Discharges*. When determining the reasonable potential above, the dry season river discharge monitoring data were pooled with the wet season discharge data for all analyses. Therefore, the reasonable potential identified applies to both the dry season and wet season discharges. Similarly, the discussions on developing WQBELs for specific pollutants applies to both dry and wet season discharges, unless specified in the findings.

50. *RPA Results for Impairing Pollutants.* While TMDLs and WLAs are being developed, interim concentration limitations are established in this permit for 303(d)-listed pollutants that have a reasonable potential to cause or contribute to an excursion above the water quality standard. In addition, mass limitations are required for bioaccumulative 303(d)-listed pollutants that can be reliably detected. Constituents on the 303(d) list for which the RPA determined a need for effluent limitations are mercury, nickel, selenium, and TCDD TEQ. Final determination of reasonable potential for some other constituents identified on the 303(d) list could not be performed owing to the lack of an established WQO or WQC.

51. *Polynuclear Aromatic Hydrocarbons (PAHs).* This Order implements the policy and regulations of the CTR and SIP in regard to PAHs, i.e., reasonable potential is determined for individual PAHs. The Basin Plan contains a WQO for total PAHs for the protection of saltwater aquatic life of 15 µg/L, as a 24-hour average; therefore, a RPA was also performed for total PAHs. The Discharger has monitoring data for all 16 individual PAHs, and all of the concentrations are non-detect with MDLs ranging from 0.02 to 0.3 µg/L. Therefore, the total PAH concentration is determined to be zero, and there is no reasonable potential for individual or total PAHs. Continued monitoring for these pollutants is required by Provision F.2.

52. *Other Organics.* The Discharger has performed sampling and analysis for all the organic constituents listed in the CTR except for asbestos. The data were used to perform the RPA. The full RPA is presented as an attachment in the Fact Sheet. The Discharger will continue to monitor for these constituents in the effluent and receiving water compliant with Provisions F.2 and F.3.

53. *Effluent Reasonable Potential Monitoring.* This Order does not include effluent limitations for constituents that do not show reasonable potential, but continued monitoring for these pollutants is required as described in Provision F.2. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures, if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC.

54. *Permit Reopener.* This Order includes a reopener provision to allow numeric effluent limitations to be added for any constituent that exhibits, respectively, reasonable potential. The Regional Water Board will make this determination based on monitoring results.

55. Copper

    a. *Copper WQC.* The saltwater criteria for copper in the CTR are 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection, expressed as dissolved metal. The Discharger developed site-specific translators for copper. The translators are 0.42 and 0.57 for converting the CTR chronic and acute dissolved WQC into total WQC, respectively. Using these translators, the translated criteria of 7.4 µg/L for chronic protection and 8.4 µg/L for acute protection were used to perform the RPA and to calculate effluent limitations.

    b. *RPA Results.* This Order establishes effluent limitations for copper because the 13 µg/L MEC exceeds the governing WQC of 7.4 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.

    c. *WQBELs.* The copper WQBELs calculated according to SIP procedures are 8.4 µg/L as the maximum daily effluent limit (MDEL) and 4.2 µg/L as the average monthly effluent limit (AMEL) for both wet and dry season discharges. Dilution credit was not able to be incorporated

in the calculation of WQBELs for wet season discharges because the maximum ambient copper concentration is higher than the limiting WQC.

d. *Immediate Compliance Infeasible.* The Discharger's Feasibility Study asserts the Discharger cannot immediately comply with these WQBELs. Regional Water Board staff statistically analyzed the Discharger's effluent data from September 2001 through April 2004 (see Section V.g. 5 and Table E of the attached Fact Sheet for detailed results of the statistical analysis). Based on the analysis, the Regional Water Board concurs with the Discharger's assertion of infeasibility to comply with final copper WQBELs.

e. *Interim Performance-based Effluent Limitation (IPBL).* Because it is infeasible for the Discharger to immediately comply with the copper WQBELs, an interim limitation is required. Regional Water Board staff considered effluent data from September 2001 to April 2004 to develop an interim limitation. Historically, IPBLs have been referenced to the 99.87th percentile value of recent performance data. Statistical analysis of the copper effluent data indicates a 99.87th percentile value of 21.5 µg/L. The previous permit contained an interim effluent limitation of 34 µg/L as a daily maximum, which is less stringent. Therefore, the 99.87th percentile based on the new performance data, 21.5 µg/L, is set as the interim limitation, expressed as a daily maximum effluent limitation.

f. *Plant Performance and Attainability.* During the period September 2001 through April 2004, the plant's effluent concentrations ranged from 1 µg/L to 13 µg/L (29 samples). All concentrations are below the IPBL, therefore, it is expected that the Discharger can comply with the IPBL for copper.

g. *Term of Interim Effluent Limitations.* The copper interim limitation for wet season discharges shall remain in effect until April 30, 2010, and until December 31, 2007 for dry season discharges.

h. *Copper SSO.* During the permit term, the Regional Water Board may amend the copper WQBEL based on the SSOs being developed for San Pablo Bay. San Pablo Bay SSOs will be applicable to the Napa River.

i. *Antibacksliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied, since the new IPBL is more stringent than the previous permit effluent limitation.

56. Mercury

a. *Mercury WQOs/WQC.* Both the Basin Plan and the CTR include objectives and criteria that govern mercury in the receiving water. The Basin Plan specifies objectives for the protection of salt water aquatic life of 0.025 µg/L as a 4-day average and 2.1 µg/L as a 1-hour average. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.

b. *Mercury RPA Results.* This Order establishes effluent limitations for mercury because the MEC for the Discharger's effluent was 0.15 µg/L, which triggers reasonable potential by Trigger 1 as defined in a previous finding.

c. *Mercury WQBELs.* The mercury WQBELs calculated according to SIP procedures are 0.039 µg/L as the MDEL and 0.012 µg/L as the AMEL for wet and dry season discharges. No dilution credit is allowed in calculating WQBELs for mercury.

d. *Immediate Compliance Infeasible.* The Discharger's Feasibility Study asserts the Discharger cannot immediately comply with these WQBELs for mercury. Regional Water Board staff statistically analyzed the Discharger's effluent data from September 2001 through April 2004 (see Section V.g. 5 and Table E of the attached Fact Sheet for detailed results of the statistical analysis). Based on the analysis, the Regional Water Board concurs with the Discharger's assertion of infeasibility to comply with final mercury WQBELs.

e. *Mercury Control Strategy.* The Regional Water Board is developing a TMDL to control mercury levels in the San Pablo Bay. The Regional Water Board, together with other stakeholders, will cooperatively develop source control strategies as part of the TMDL development. Municipal discharge point sources may not represent a significant mercury loading to San Pablo Bay. Therefore, the currently preferred strategy is to apply interim mass loading limits to point source discharges while focusing mass reduction efforts on other more significant and controllable sources. While the TMDL is being developed, the Discharger will cooperate in maintaining ambient receiving water conditions by complying with performance-based mercury mass emission limits. Therefore, this Order includes interim mass loading effluent limitations for mercury, as described in the findings below. The Discharger is required to implement source control measures and cooperatively participate in special studies as described below.

f. *Mercury TMDL.* The current 303(d) list includes the San Pablo Bay as impaired by mercury, due to high mercury concentrations in the tissue of fish from the Bay. Methyl-mercury, the highly toxic form of mercury, is a persistent bioaccumulative pollutant. There is no evidence to show that the mercury discharged by the Discharger is taken out of the hydrologic system, by processes such as evaporation before reaching San Pablo Bay. Absent this evidence, the Regional Water Board assumes that the mercury reaches the Bay through either sediment transport or water flows. The Regional Water Board intends to establish a TMDL that will lead towards overall reduction of mercury mass loadings into San Pablo Bay. The final mercury effluent limitations will be based on the Discharger's WLA in the TMDL. While the TMDL is being developed, the Discharger will comply with performance-based mercury concentration and mass-based limitations to cooperate in maintaining current ambient receiving water conditions.

g. *Interim Performance-based Effluent Limitation (IPBL).* Because it is infeasible for the Discharger to immediately comply with the mercury WQBELs, an interim limitation is required. The previous Order contained an interim effluent limitation of 0.087 µg/L as an average monthly, which was determined from pooled ultra-clean mercury data for POTWs throughout the Region using secondary treatment (*Staff Report: Statistical Analysis of Pooled Data from Region-wide Ultra-clean Sampling, 2000*). This interim limitation is retained in this Order.

h. *Interim Mercury Mass Emission Limit.* In addition to the concentration-based mercury IPBL, this Order establishes an interim mercury mass loading limit of 0.025 kilograms per month (kg/month). This limit is retained from the previous Order. It will maintain current loadings until a TMDL is established and is consistent with state and federal antidegradation and antibacksliding requirements. The final mass-based effluent limitation will be based on the WLA derived from the mercury TMDL.

i. *Mass Trigger.* This Order establishes a mercury mass trigger of 0.014 kg/month. This mass trigger is also retained from the previous Order. The mass loading trigger, if exceeded, requires the Discharger to initiate additional actions, as specified in Provision F.7.

j. *Discharger's Performance and Attainability.* During the period September 2001 through April 2004, the Discharger's effluent concentrations ranged from 0.008 µg/L to 0.15 µg/L (38

samples). Only one concentration, 10 times higher than the second highest concentration, was above the IPBL. This value appears to be extremely rare and is an isolated incident as it occurred just once out of 38 samples. It is, therefore, expected that the Discharger can comply with the IPBL for mercury.

k. *Term of Interim Mass Limitation.* The mercury interim concentration limitation shall remain in effect until April 27, 2010, or until the Regional Water Board amends the limitations based on additional data, SSOs, or until the Regional Water Board adopts a TMDL-based effluent limitation for mercury.

l. *Antibacksliding/Antidegradation.* The antibacksliding and antidegradation requirements are satisfied as the IPBL and mass emission limitations are unchanged from the previous permit limitations.

57. Nickel

a. *Nickel WQOs.* The Basin Plan contains numeric nickel saltwater WQOs, which are 8.2 µg/L for chronic protection and 74 µg/L for acute protection, as dissolved metal. Using the conversion factor of 0.99, the converted WQOs for nickel are 8.3 µg/L for chronic protection and 75 µg/L for acute protection, as total recoverable metal.

b. *RPA Results.* The maximum ambient background nickel concentration of 68.7 µg/L exceeds the governing WQO of 8.3 µg/L, demonstrating reasonable potential by Trigger 2, as defined in a finding above.

c. *WQBELs.* The nickel WQBELs calculated according to SIP procedures are 9.5 µg/L as the MDEL and 8.0 µg/L as the AMEL for both wet and dry season discharges. Dilution credit was not able to be incorporated in the calculation of WQBELs for wet season discharges because the maximum ambient nickel concentration is higher than the limiting WQO.

d. *Plant Performance and Attainability.* During the period September 2001 through April 2004, the Discharger's nickel effluent concentrations ranged from 3 µg/L to 4.9 µg/L (26 samples). Regional Water Board staff performed a statistical analysis on the data. Based on this analysis, the Regional Water Board determines that the Discharger can comply with the final WQBELs.

e. *Antibacksliding/Antidegradation.* The previous permit did not contain an effluent limitation for nickel. Therefore, the antibacksliding and antidegradation requirements do not apply.

58. Selenium

a. *Selenium WQC.* To protect saltwater aquatic life, the NTR specifies WQC for selenium of 5 µg/L for chronic aquatic life protection and 20 µg/L for acute protection.

b. *RPA Results.* The maximum ambient background selenium concentration of 19 µg/L exceeds the governing WQC of 5 µg/L, demonstrating reasonable potential by Trigger 2, as defined in a finding above.

c. *WQBELs.* The selenium WQBELs calculated according to SIP procedures are 9.2 µg/L MDEL and 3.3 µg/L AMEL for dry and wet season discharges. No dilution credit is allowed in calculating WQBELs for selenium.

d. *Immediate Compliance Infeasible.* The Discharger's Feasibility Study asserts the Discharger cannot immediately comply with these WQBELs for selenium. There are a total of 23 data points, among them only 7 are detected values. Due to the high censoring and lack of good distribution fit to the data set, Regional Water Board staff compared the MEC and the AMEL to examine the feasibility of compliance for selenium. Since the MEC of 5 µg/L is higher than the AMEL of 3.3 µg/L, the Regional Water Board concurs with the Discharger's infeasibility assertion.

e. *Interim Performance-based Effluent Limitation (IPBL).* Because it is infeasible for the Discharger to immediately comply with the selenium WQBELs, an interim limitation is required. Since it is not possible to perform a meaningful statistical analysis due to high censoring to estimate the 99.87th percentile, the MEC of 5 µg/L is set as the interim limitation, as a daily maximum.

f. *Plant Performance and Attainability.* During the period from September 2001 through April 2004, the plant's effluent concentrations for selenium ranged from <0.5- 5 µg/L (23 samples) with only 7 detected concentrations. All detected values are below the interim limitation. Therefore, it is expected that the Discharger can comply with the interim limitation for selenium.

g. *Term of Selenium IPBL.* The selenium interim concentration limitation shall remain in effect until April 27, 2010 or until the Regional Water Board amends the limitations based on additional data, or until the Regional Water Board adopts a TMDL-based effluent limitation for selenium.

h. *Selenium Source Control Strategy.* As a prerequisite to being granted the compliance schedule and interim limits described above, the Discharger will implement selenium source control strategies as indicated in the Discharger's 2005 Feasibility Study, as **Attachment F** of this Order.

i. *Selenium Mass Limitations.* The Clean Estuary Partnership (CEP)'s *Conceptual Model and Impairment Assessment for Selenium in San Francisco Bay*, dated February 2004, suggests that POTWs are insignificant sources of selenium. POTWs are estimated to contribute no more than 2% of the total mass loadings to the Bay as compared to all other major sources, i.e., Sacramento River, agricultural drainage via San Joaquin River, and refineries. Additionally, that report highlighted some of the uncertainties associated with the impairment assessment. Based on this, an interim mass limit for this discharge is unnecessary at this time as the interim concentration limit will be sufficient to maintain current performance. Thus, no selenium mass limitations are established in this Order.

j. *Antibacksliding/Antidegradation.* The previous permit did not contain an effluent limitation for selenium. Therefore, the antibacksliding and antidegradation requirements do not apply.

59. Cyanide

a. *Cyanide WQC.* The NTR includes WQC that govern cyanide for the protection of aquatic life in salt surface water. The NTR specifies a saltwater Criterion Maximum Concentration (CMC) and Criterion Chronic Concentration (CCC) of 1 µg/L.

b. *RPA Results.* This Order establishes effluent limitations for cyanide because the 20 µg/L MEC exceeds the governing WQC of 1 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding, above.

c. *Cyanide WQBELs.* The cyanide WQBELs calculated according to SIP procedures are 1.0 µg/L MDEL and 0.4 µg/L AMEL for dry season discharges and wet season discharges without dilution

(D=0), and 6.7 µg/L MDEL and 2.6 µg/L AMEL for wet season discharges with a 10:1 dilution (D=9).

d. *Immediate Compliance Infeasible.* The Discharger's Feasibility Study asserts the Discharger cannot immediately comply with these WQBELs for cyanide. Regional Water Board staff statistically analyzed the Discharger's effluent data from September 2001 through April 2004 (see Section V.g. 5 and Table E of the attached Fact Sheet for detailed results of the statistical analysis). Based on the analysis, the Regional Water Board concurs with the Discharger's assertion of infeasibility to comply with final cyanide WQBELs.

e. Cyanide is a regional problem associated with the analytical protocol for cyanide analysis due to matrix inferences. There is also evidence to suggest that, to some degree, cyanide measured in effluents may be an artifact of the analytical method used or the result of analytical interferences. In general, the chemistry of cyanide formation in POTW effluents is highly complex, involving both chemical and environmental factors, in ways that are still poorly understood, despite considerable research. In addition, it is not known whether the form(s) of cyanide that are measured in POTW effluents exhibit toxicity in these environments. A 3-year $1.5 million (M) investigation completed in late 2002, sponsored by the Water Environment Research Foundation (WERF), in which several Bay Area POTWs participated, described a number of possible mechanisms for cyanide formations, and shed new light on analytical issues, but found no process or operational measures that could be implemented by the Discharger to reduce observed cyanide levels in the effluent.

f. *SSO and Ambient Background Data Collection.* A regional discharger-funded study is underway for development of a cyanide SSO or recalculation of the criteria. The cyanide study plan was submitted on October 29, 2001, and the final report was submitted on June 29, 2003. The WQBELs will be re-calculated based on a cyanide SSO, or updated criteria if adopted.

g. WERF has initiated a follow-up $0.5 million study to reassess cyanide criteria for the protection of aquatic life and wildlife. It will critique data to assure it meets current best scientific standards and new U.S. EPA guidelines, recommend testing strategies, and develop a data set to meet guidelines for ambient water quality development. It is expected that results from that study will provide information useful to devising alternative cyanide compliance strategies for shallow water dischargers in San Francisco Bay.

h. *Interim Effluent Limitation.* Because it is infeasible for the Discharger to immediately comply with the cyanide WQBELs, an interim limitation is required. Regional Water Board staff considered effluent data from September 2001 to April 2004 to develop an interim limitation. Historically, IPBLs have been referenced to the 99.87th percentile value of recent performance data. Statistical analysis of the cyanide effluent data indicates a 99.87th percentile value of 43.7 µg/L. The previous permit contains an interim limitation of 25 µg/L, which was developed based on pooled cyanided effluent data from several waste water treatment plants (WWTP) using activated sludge treatment systems. Therefore, the previous permit limitation is retained as the interim effluent limitation, expressed as a daily maximum.

i. *Plant Performance and Attainability.* During the period September 2001 through April 2004, the Discharger's cyanide effluent concentrations ranged from 0.3 µg/L to 20 µg/L (36 samples). All concentrations were below the interim limitation of 25 µg/L. It is, therefore, expected that the plant can comply with the interim limitation for cyanide.

j. *Term of Interim Effluent Limitations.* The cyanide interim limitation shall remain in effect until April 27, 2010 for wet season discharges, and until December 31, 2007 for dry season discharges, or until the Regional Water Board amends the limitations based on additional data or SSOs.

k. *Anti-backsliding/Anti-degradation.* The anti-backsliding/anti-degradation requirements are satisfied as the interim limitation is unchanged from the previous permit limitation.

60. Dioxins and Furans

a. *Dioxin TEQ WQC.* The CTR establishes a numeric human health WQC of 0.014 pg/L for 2,3,7,8-TCDD based on consumption of organisms. The preamble of the CTR states that California NPDES permits should use TEQs where dioxin-like compounds have reasonable potential to cause or contribute to violation of narrative standards. The preamble further states that U.S. EPA intends to use the 1998 World Health Organization TEF scheme in the future and encourages California to use this scheme in State programs. In addition, the CTR preamble states U.S. EPA's intent to adopt revised WQC guidance subsequent to their health reassessment for dioxin-like compounds. In 1998, the U.S. EPA listed the Bay as impaired by dioxin-like compounds. Therefore, discharges that contain dioxin-like compounds have a reasonable potential to contribute to this impairment. To address this, it is appropriate to apply the TEQ scheme in setting numeric limits for such discharges to protect the Basin Plan narrative standards. The Regional Water Board used TEQs to translate the narrative WQOs to numeric WQOs for the other 16 congeners.

b. *RPA Results.* The maximum ambient background dioxin TEQ is 0.0368 pg/L, and is above the governing WQC, which triggers reasonable potential using Trigger 2, as defined in a previous finding.

c. *WQBELs.* The TCDD TEQ WQBELs calculated according to SIP procedures are 0.014 pg/L as the AMEL and 0.028 pg/L for both wet season and dry season discharges. No dilution credit is allowed in calculating WQBELs for TCDD TEQ.

d. *Dioxin Monitoring.* The Discharger has eight measurements of 2,3,7,8,-TCDD and all 16 congeners from September 2001 through February 2004. There are only three detected TCDD TEQ, ranging from 0.000684 to 0.002 pg/L. Although all data are either non-detect or below the WQC, there is uncertainty in determining compliance attainability due to limited data. In addition, the MLs for all 17 dioxin congers range from 5 pg/L to 50 pg/L (see BACWA Letter dated April 23, 2002), which are higher than the WQBELs, therefore, the Regional Water Board has determined that it is infeasible for the Discharger to achieve immediate compliance. This Order requires additional dioxin monitoring to complement the Clean Estuary Project's special dioxin project, consisting of impairment assessment and a conceptual model for dioxin loading into the Bay. The permit will be reopened, as appropriate, to include interim dioxin limitations when additional data become available.

61. Tributyltin (TBT)

a. *TBT WQOs.* The Basin Plan provides narrative TBT WQOs for saltwater aquatic life of 0.0074 µg/L for chronic protection (4-day average) and 0.42 µg/L for acute protection (1-hour average).

b. *RPA Results.* The MEC is 0.0226 µg /L, and is above the governing WQO, which triggers reasonable potential using Trigger 1, as defined in a previous finding.

d. *TBT WQBELs.* The tributyltin WQBELs calculated according to SIP procedures are 0.006 µg/L as the AMEL and 0.012 µg/L as the MDEL for dry season discharges and wet season discharges without dilution (D=0), and 0.05 µg/L MDEL and 0.1 µg/L AMEL for wet season discharges with a 10:1 dilution (D=9).

e. *Monitoring Requirements.* The Discharger has eight measurements of TBT from September 2001 through February 2004. There are only two detected concentrations; all others are non-detect, with detection limits ranging from 0.00051 to 0.00159 µg/L. The Discharger claimed that it is not feasible to achieve immediate compliance with the WQBELs for TBT. Due to limited effluent data, the Regional Water Board concurred with the Discharger's infeasibility assertion. Also due to limited data, this Order does not establish an interim limitation for TBT. This Order requires the Discharger to continue monitoring TBT and develop pollution prevention activities to reduce concentrations in the effluent. The permit will be reopened, as appropriate, to include TBT limitations when additional data become available. Final WQBELs for TBT may be considered by the Regional Water Board in the next permit reissuance if the effluent continues to show reasonable potential.

Whole Effluent Acute Toxicity

62. a. *Permit Requirements.* This Order includes effluent limits for whole-effluent acute toxicity that are unchanged from the previous Order. All bioassays shall be performed according to the U.S. EPA approved method in 40 CFR 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition." The Discharger is required to use the 5th Edition method for compliance determination upon the effective date of this Order. If the Discharger needs a time period for the transition from the 4th to the 5th Edition method, it should submit a written request with justifications to the Executive Officer for approval within 30 days of the permit adoption date.

b. *Compliance History.* The Discharger's acute toxicity monitoring data show that there were a few exceedances of the effluent limitations during 2001-2003, with fish survival rates ranging between 25-65% (current test species is fathead minnow). The Discharger has claimed that the observed toxicity was mostly due to elevated un-ionized ammonia in the effluent. The Discharger, however, did not provide the necessary analysis to prove that the toxicity was caused by elevated un-ionized ammonia concentrations.

c. *Ammonia Toxicity.* If acute toxicity is observed in the future and the Discharger believes that it is due to ammonia toxicity, this has to be shown through a Toxicity Identification Evaluation (TIE) acceptable to the Executive Officer. If ammonia toxicity is verified in the TIE, the Discharger may utilize pH adjustment protocol for the routine bioassay testing.

Whole Effluent Chronic Toxicity

63. a. *Permit Requirements.* This permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective, and in accordance with U.S. EPA and State Water Board Task Force guidance, and BPJ. This permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as "triggers" to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE) as necessary. The permit requirements for chronic toxicity are also consistent with the CTR and SIP requirements.

b. *Wet Season Chronic Toxicity Triggers.* This Order includes chronic toxicity triggers for wet season discharges, which are three sample median of 10 chronic toxicity (TUc[2]) and a single sample maximum of 20 TUc. These triggers are appropriate at this time pending on a mixing zone study; however, the Regional Water Board intends to revisit these triggers subsequent to the mixing zone study results.

c. *Screening Phase Study.* The Discharger has not previously performed chronic toxicity monitoring. The Discharger has prepared a chronic toxicity screening phase study plan and will complete the study by June 30, 2005. The Discharger shall start using the identified species as the compliance species if approved by the Executive Officer.

d. *Permit Reopener.* The Regional Water Board will consider amending this permit to include numeric toxicity limits if the Discharger fails to aggressively implement all reasonable control measures included in its approved TRE workplan, following detection of consistent significant non-artifactual toxicity.

Bacteriological Limits

64. The Discharger submitted a report titled *Revised Bacteria Effluent Limits Special Study* (Study), June 2003 to assess the beneficial uses of its receiving water and to evaluate the feasibility of substituting the total coliform effluent limitations with fecal coliform or enterococcus effluent limitations. The study shows that the alternative bacteriological effluent limitations can provide enough protection of the beneficial uses of the receiving water. Furthermore, as the Napa River is estuarine at the discharge point, the lower, more conservative, enterococci WQOs for freshwater were chosen. This Order includes alternative enterococcus effluent limits instead of the total coliform limits included in the previous Order. Effluent Limitations B(iii) of this Order specify the effluent limitations and detailed requirements.

Storm Water

65. *Regulations.* Federal Regulations for storm water discharges were promulgated by the U.S. EPA on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activity (industrial storm water) to obtain a NPDES permit and to implement Best Available Technology Economically Available (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.

66. *Exemption from Coverage under Statewide Storm Water General Permit.* The State Water Board adopted a statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit CAS000001, adopted November 19, 1991, amended September 17, 1992). The General Permit is applicable to municipal wastewater treatment facilities. Coverage under the General Permit is not required for the subject discharge because all storm water flows from the plant and sludge disposal area are captured, directed to the plant headworks, and treated along with the wastewater discharged to the plant. Because all storm water from the facility is treated at the facility, this permit regulates the discharge of storm water from the plant.

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[2] A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge. Failure to conduct the required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limits for chronic toxicity

Pollution Prevention

67. The Discharger has established a Pollution Prevention Program under the requirements specified by the Regional Water Board.

    a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.

    b. There may be some redundancy between the Pollution Prevention Program and the Pollutant Minimization Program requirements.

    c. Where the two programs' requirements overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.

    d. For constituents identified under Effluent Limitations, Section B, the Discharger will conduct appropriate source control or pollutant minimization measures that are consistent with its approved Pollution Prevention Program. For constituents with compliance schedules under this permit, the applicable source control and pollutant minimization requirements of Section 2.1 of the SIP will also apply.

68. On October 15, 2003, the Regional Water Board adopted Resolution R2-2003-0096 in support of a collaborative working approach between the Regional Water Board and BACWA to promote Pollution Prevention Program development and excellence. Specifically, the Resolution embodies a set of eleven guiding principles that will be used to develop tools such as "P2 menus" for specific pollutants, as well as provide guidance in improving P2 program efficiency and accountability. Key principles in the Resolution include promoting watershed, cross-program and cross-media approaches to pollution prevention, and jointly developing tools to assess program performance that may include peer reviews, self-audits or other formats.

Pretreatment Program

69. *Pretreatment Program.* The Discharger has implemented and is maintaining an effective U.S. EPA approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR Part 403) and the requirements specified in **Attachment D** "Pretreatment Requirements". Order No. 01-059 amended the Discharger's permit (as well as fourteen other dischargers' permits in the Region) to reflect the Regional Water Board's most recent pretreatment requirements. The requirements of this Order supersede Order No. 01-059.

70. The Discharger submitted an evaluation of its local limits titled Soscol Water Recycling Facility Local Limits Report, July 2003 (the July 2003 report). On April 8 and 11, 2005, the Discharger submitted a response and a revised response, respectively, to the Regional Water Board staff's comments on the July 2003 report. The Discharger's response dated April 11, 2005, is included in this Order as **Attachment D**. The Regional Water Board approves all the modifications to the local limits, except copper, as detailed in **Attachment D** (Table: Summary of Findings). The Regional Water Board, as part of this permit, conditionally approves an increase of the copper local limit from 2.8 pounds/day (lb/day) to 5.12 lb/day as maximum allowable industrial loading. An increase of a local limit requires a 30-day public noticing, therefore, a provision is included in this Order requiring the Discharger to complete this task before the new copper local limit becomes effective.

Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy

71. On August 6, 2001, the Regional Water Board sent a letter to all the permitted dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter".

72. Pursuant to the August 6, 2001 Letter from Regional Water Board Staff, the Discharger was required to submit workplans and sampling results for characterizing the levels of selected constituents in the effluent. The Discharger has collected 7 effluent samples for all 126 priority pollutants except for asbestos since 2001 and 3 receiving water samples for the 126 priority pollutants in 2002 through the Napa River Collaborative Study, and additional receiving water monitoring data during several other studies. These data were used in the RPA and interim limitation calculations in this Order.

Monitoring Requirements (Self-Monitoring Program)

73. *Monitoring Requirements (Self-Monitoring Program).* The SMP includes monitoring at the outfall for conventional, non-conventional, toxic pollutants, and acute and chronic toxicity. Monitoring for conventional and non-conventional pollutants has remained the same as the previous permit except that the effluent settleable solids monitoring is no longer required since the settleable solids limitations have been eliminated. Monthly monitoring is required for copper, mercury, nickel, selenium, and cyanide to determine compliance with effluent limitations. Twice per year monitoring for dioxins is required to provide information for TMDL development. Twice per year monitoring for TBT is required to provide information for effluent limitation development. The Discharger shall also continue its 13267 monitoring for the effluent and receiving water for all the priority pollutants listed in the August 6, 2001 Letter according to its sampling plan. A minimum of one sample of the priority pollutants shall be collected during the term of the permit. The results shall be submitted 180 days before the permit expires with the permit renewal application. With respect to effluent monitoring, the monitoring and reporting requirements of this Order supersede the requirements of the Executive Officer's August 6, 2001 letter.

Optional Mass Offset

74. This Order contains requirements to prevent further degradation of impaired waterbodies. Such requirements include the adoption of interim mass limitations that are based on treatment plant performance, provisions for aggressive source control, feasibility studies for additional wastewater reclamation, and treatment plant optimization. After implementing these efforts, the Discharger may find that further net reductions of the total mass loadings of the 303(d)-listed pollutants to the receiving water can be achieved only through a mass offset program. This Order includes an optional provision for a mass offset program.

O & M Manual

75. The Discharger maintains an Operations and Maintenance Manual (O & M Manual) to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

CEQA Exemption, Notification, and Public Hearing

76. *NPDES Permit.* This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.

77. *Notification.* The Discharger and interested agencies and persons have been notified of the Regional Water Board's intent to reissue requirements for the existing discharges and have been provided an opportunity to submit their written views and recommendations. Regional Water Board staff prepared a Fact Sheet and Response to Comments, which are hereby incorporated by reference as part of this Order.

78. *Public Hearing.* The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code, regulations, and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of wastewater at any point where it does not receive a minimum initial dilution of 10:1, or into dead-end slough and similar confined waters is prohibited, except as defined below. Based on Findings 33 through 35, an exception to this prohibition is granted for the discharge of treated effluent during the wet season. Discharge of treated wastewater at a location or in a manner different from that described in the findings of this Order is prohibited.

2. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the plant or from the collection system or pump stations tributary to the plant, is prohibited, except as provided for bypasses under the conditions stated in 40 CFR 122.41(m)(4) and in Standard Provisions A.13.

3. The average dry season discharge shall not exceed 15.4 mgd. The average dry season flow shall be determined over three consecutive dry season months each year.

4. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by this NPDES permit, to a storm drain system or waters of the State are prohibited.

5. From May 1 through October 31, discharge is prohibited. Discharge to the Napa River prior to October 31 or later than May 1 may be authorized by the Executive Officer, based on written, email or facsimile request from the Discharger documenting that normally planned disposal to land is not feasible due to wet season conditions. In these cases, the discharge shall comply with Prohibition A.3 and the effluent limitations prescribed in B(ii) and B(iii), emergency discharge into shallow waters, of this Order.

B. EFFLUENT LIMITATIONS

The term "effluent" refers to the treated wastewater effluent from the Discharger's wastewater treatment facility, as discharged to the Napa River.

i. Effluent Limitations Applicable to Wet Season Discharges (November 1 through April 30):

1. **Conventional Pollutants:** The effluent discharged to the Napa River during the wet season period (November 1 through April 30) shall not exceed the following limits specified in Table 3 for conventional pollutants:

Table 3 - Conventional Pollutants Effluent Limitations for Wet Season Discharges

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
Biochemical Oxygen Demand (BOD_5, 20°C)	mg/L	30	45	--	--
or Carbonaceous Oxygen Demand (COD)	mg/L	25	40	--	--
Total Suspended Solids	mg/L	30	45	--	--
Oil & Grease	mg/L	10	--	20	--
Chlorine Residual[1]	mg/L	--	--	--	0.0

[1] The chlorine residual requirement is defined as below the limit of detection in standard methods defined in *Standard Methods for the Examination of Water and Wastewater.* The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (which could be interpolated), and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

2. **pH:** The pH of the discharge shall not exceed 9.0 nor be less than 6.0 standard units. If the Discharger employs continuous pH monitoring, the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:

   a. The total time during which the pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month.

   b. No individual excursion from the required range of pH values shall exceed 60 minutes.

3. **Chronic Toxicity:**

a. Compliance with the Basin Plan narrative toxicity objective shall be demonstrated according to the following tiered triggers based on results from representative samples of the treated effluent meeting test acceptability criteria and Provision F.9:

   (1) Routine monitoring;

   (2) Accelerated monitoring on a monthly basis after exceeding a three sample median value of 10 TUc or a single sample maximum of 20 TUc or greater;

   (3) Return to routine monitoring if accelerated monitoring does not exceed either "trigger" in (2), above;

   (4) Initiate approved toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above either "trigger" in (2), above;

(5) Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below "trigger" level in (2), above or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

b. *Test Species and Methods*: The Discharger shall conduct routine monitoring with the most sensitive species determined during the most recent chronic toxicity screening performed by the Discharger and approved by the Executive Officer. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in **Attachment A** of the SMP. In addition, bioassays may be conducted in compliance with the most recently promulgated test methods, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," currently third edition (EPA-821-R-02-014), and "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," currently fourth Edition (EPA-821-R-02-013), with exceptions granted the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

4. **Toxic Pollutants:** The effluent discharged to the Napa River during the wet season period (November 1 through April 30) shall not exceed the following limits specified in Table 4 for priority toxic pollutants:

Table 4 – Toxic Pollutants Effluent Limitations for Wet Season Discharges [1,2]

Constituents	Notes	WQBELs		Interim Limits	
		Daily Maximum (MDEL) µg/L	Monthly Average (AMEL) µg/L	Daily Maximum µg/L	Monthly Average µg/L
Copper	[3]	--	--	21.5	--
Mercury	[4]	--	--	--	0.087
Nickel	--	9.5	8.0	--	--
Selenium	[3]	--	--	5	--
Cyanide	[3][5]	--	--	25	--

[1] a. Compliance with these limitations is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.

b. All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limitation if the discharge concentration exceeds the effluent limitation and the reported ML for the analysis for that constituent.

c. Limitations apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).

d. All metal limitations are total recoverable.

[2] A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent. The table below indicates the lowest minimum level that the Discharger's laboratory must achieve for compliance determination purposes.

Constituent	ML (µg/L)
Copper	0.5
Mercury	0.002
Nickel	1
Selenium	1
Cyanide	5

[3] The interim limitations for copper shall remain in effect until April 30, 2010, for cyanide and selenium, they shall remain in effect until April 27, 2010, or until the Regional Water Board amends the limitation based on additional information, SSOs, or WLA from a selenium TMDL.

[4] The interim limitation for mercury shall remain in effect until April 27, 2010, or until the Regional Water Board adopts TMDL-based effluent limitation for mercury. Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002 µg/L or lower.

[5] Compliance may be demonstrated by measurement of weak acid dissociable cyanide.

ii. Effluent Limitations Applicable to Dry Season Discharges (May 1 through October 31):

The Discharger reclaims and reuses treated effluent in accordance with Order No. 96-011. The effluent limitations prescribed in this section are intended for emergency discharge cases in which extreme season conditions have disturbed the normal summertime water reuse irrigation schedule.

1. **Conventional Pollutants:** The effluent discharged to the Napa River during the dry season period (May 1 through October 31) shall not exceed the following limits specified in Table 5 for conventional pollutants:

Table 5 - Conventional Pollutants Effluent Limitations for Dry Season Discharges

Constituent	Units	30-Day (Monthly) Average	7-Day (Weekly) Average	Daily Maximum	Instantaneous Maximum
A. Biochemical Oxygen Demand (BOD_5, 20°C)	mg/L	10	20	--	--
B. Total Suspended Solids	mg/L	20	30	--	--
C. Oil & Grease	mg/L	10	--	20	--
D. Residual Chlorine[1]	mg/L	--	--	--	0.0

[1] The chlorine residual requirement is defined as below the limit of detection in standard methods defined in *Standard Methods for the Examination of Water and Wastewater.* The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (which could be interpolated), and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

2. **pH:** The pH of the discharge shall not exceed 8.5 nor be less than 6.5 standard units. If the Discharger employs continuous pH monitoring, the Discharger shall be in compliance with the pH limitation specified herein, provided the following condition is satisfied:

No individual excursion from the required range of pH values shall exceed 60 minutes.

3. Chronic Toxicity:

If an emergency discharge lasts longer than 7 days, the Discharger shall perform chronic toxicity and compliance with the Basin Plan narrative toxicity objective shall be demonstrated according to the following trigger based on results from representative samples of the treated effluent meeting test acceptability criteria and Provision F.9:

(1) Routine monitoring;

(2) Accelerated monitoring on a monthly basis after exceeding a single sample maximum of 1 TUc or greater;

(3) Return to routine monitoring if accelerated monitoring does not exceed the trigger in (2), above;

(4) Initiate approved toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above trigger in (2) above;

(5) Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below "trigger" level in "2", above or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

b. *Test Species and Methods*: The Discharger shall conduct routine monitoring with the most sensitive species determined during the most recent chronic toxicity screening performed by the Discharger and approved by the Executive Officer. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in **Attachment A** of the SMP. In addition, bioassays may be conducted in compliance with the most recently promulgated test methods, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," currently third edition (EPA-821-R-02-014), and "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," currently fourth Edition (EPA-821-R-02-013), with exceptions granted the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

4. Toxic Pollutants: The effluent discharged to the Napa River during the dry season period (May 1 through October 31) shall not exceed the following limits specified in Tables 6 and 7 for priority toxic pollutants:

Table 6 – Toxic Pollutants Effluent Limitations for Dry season Discharges [1,2] (From Permit Effective Date to December 31, 2007)

Constituents	Notes	WQBELs (µg/L)		Interim Limits (µg/L)	
		Daily Maximum (MDEL)	Monthly Average (AMEL)	Daily Maximum	Monthly Average
Copper	[3]	--	--	21.5	--
Mercury	[4]	--	--	--	0.087
Nickel	--	9.5	8.0	--	--
Selenium	[5]	--	--	5	--
Cyanide	[3][6]	--	--	25	--

Table 7 – Toxic Pollutants Effluent Limitations for Dry season Discharges [1,2] (Starting January 1, 2008)

Constituents	Notes	WQBELs (µg/L)		Interim Limits (µg/L)	
		Daily Maximum (MDEL)	Monthly Average (AMEL)	Daily Maximum (MDEL)	Monthly Average (AMEL)
Copper	--	8.4	4.2	--	--
Mercury	[4]	--	--	--	0.087
Nickel	--	9.5	8.0	--	--
Selenium	[5]	--	--	5	--
Cyanide	[6]	1.0	0.4	---	--

[1] a. Compliance with these limitations is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.

b. All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limitation if the discharge concentration exceeds the effluent limitation and the reported ML for the analysis for that constituent.

c. Limitations apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).

d. All metal limitations are total recoverable.

[2] A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent. The table below indicates the lowest minimum level that the Discharger's laboratory must achieve for compliance determination purposes.

Constituent	**ML (µg/L)**
Copper	0.5
Mercury	0.002
Nickel	1
Selenium	1
Cyanide	5

[3] The interim limitations for copper and cyanide shall remain in effect until December 31, 2007, and final WQBELs shall become effective on January 1, 2008.

[4] The interim limitation for mercury shall remain in effect until April 27, 2010 or until the Regional Water Board adopts TMDL-based effluent limitation for mercury. Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002 µg/L or lower.

[5] The interim limitations for selenium shall remain in effect until April 27, 2010, or until the Regional Water Board amends the limitation based on additional information or WLA from a selenium TMDL.

[6] Compliance may be demonstrated by measurement of weak acid dissociable cyanide.

iii. Effluent Limitations Applicable to Wet and Dry Season Discharges:

1. **Enterococcus Limitations:** The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

   The monthly average (expressed as a geometric mean) shall not exceed 33 colonies per 100 mL of effluent sample. A single effluent sample shall not exceed a maximum value of 89 colonies per 100 mL of effluent sample, as verified by a follow-up sample taken with 24 hours. If the Discharger fails to collect a follow-up sample, the original single sample result in excess of the limit shall constitute an exceedance of the limit.

2. **85 Percent Removal, BOD and TSS:** The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and total suspended solids values for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same period.

3. **Acute Toxicity:**

a. Representative samples of the discharge shall meet the following limits for acute toxicity. Bioassays shall be conducted in compliance with Provision F.8.

   The survival of organisms in undiluted effluent from parallel 96-hour flow-through bioassays shall be an eleven (11) sample median value of not less than 90 percent survival, and an eleven (11) sample 90 percentile value of not less than 70 percent survival.

b. These acute toxicity limits are further defined as follows:

   11-sample median: Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or less bioassay tests show less than 90 percent survival.

   90th percentile: A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit if one or more of the past ten or less bioassay tests show less than 70 percent survival.

c. Bioassays shall be performed using methods in 40 CFR 136 and the most sensitive species as specified in writing by the Executive Officer. Bioassays shall be conducted in compliance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms", currently 5th Edition (EPA-821-R-02-012), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

d. If the Discharger demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limitation.

4. **Mass Trigger and Limit:** Until TMDL and WLA efforts for mercury provide enough information to establish a different WQBEL, the Discharger shall demonstrate that the current mercury mass loading to the receiving water does not increase by complying with the following:

a. *Mass limit.* The 12-month moving average mass loading for mercury shall not exceed 0.025 kg/month.

b. *Mass trigger.* If the 12-month moving average monthly mass loading for mercury exceeds the 0.014 kg/month trigger value, this is not considered a permit limit violation; however, the actions specified in Provision F.7 shall be initiated. Failure to initiate and complete the actions will be considered a permit condition violation.

c. Compliance with this limit and trigger shall be evaluated using monthly moving averages of total mass load, computed as described below:

12-Month Monthly Moving Average of Total Mass Load = Average of the monthly total mass loads from the past 12 months

Monthly Total Mass Load (kg/month) = monthly plant discharge flows (in mgd) from the Outfall (E-001) × monthly effluent concentration measurements (in µg/L) corresponding to the above flows, for samples taken at E-001 × 0.1151 (conversion factor to convert million gallons/day × µg/L to kg/month).

If there is no river discharge during a particular month, the flow is set to zero for the calculation. If more than one measurement is obtained in a calendar month, the average of these concentrations is used as the monthly value for that month. If the results are less than the method detection limit used, the concentrations are assumed to be equal to the method detection limit.

d. The Discharger shall submit a cumulative total of mass loadings for the previous 12 months with each monthly Self-Monitoring Report. Compliance of each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring calculated as using the method described in section B(iii)(2)(c) above. The Discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.

e. The mercury TMDL and WLAs will supersede the interim mass emission limitation upon its completion. The Clean Water Act's anti-backsliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following completion of the TMDLs and WLAs, if the requirements for an exception to the rule are met.

C. POND SPECIFICATIONS

1. Wastewater grab samples within 1 foot of the surface of all ponds shall meet the following triggers at all times:

Dissolved oxygen	2.0 mg/L minimum
Dissolved sulfides	0.1 mg/L maximum

If the trigger is not met, the Discharger shall investigate the cause and address the issue.

2. A minimum freeboard of two feet shall be maintained in all ponds at all times.

3. All ponds shall be protected from erosion, washout, and flooding from the maximum flood having a predicted frequency of once in 100 years.

4. The waste shall not cause a significant degradation of any ground water so as to impair beneficial uses.

D. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at levels that cause nuisance or adversely affect beneficial uses:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, salinity, or apparent color;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin and;

   e. All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include, but are not limited to, decreased growth rate and decreased reproductive success of resident indicator species, decreased fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State any one place within one foot of the water surface:

   a. Dissolved Oxygen: 5.0 mg/L, minimum

      The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

   b. Dissolved Sulfide: 0.1 mg/L, maximum

   c. pH: Variation from normal ambient pH by more than 0.5 pH units.

   d. Un-ionized Ammonia: 0.025 mg/L as N, annual median
      0.16 mg/L as N, maximum

   e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge of waste shall not cause a violation of any existing water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, after the effective date of this Order, the Regional Water Board may revise and modify this Order in accordance with such more stringent standards.

4. Storm water discharges from the Discharger's site shall not cause or contribute to a violation of any applicable water quality objective for receiving waters contained in the Basin Plan.

E. SLUDGE MANAGEMENT PRACTICES

1. All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR Part 503. If the Discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to the U.S. EPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by U.S. EPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger. The Regional Water Board should be copied on relevant correspondence and reports forwarded to the EPA regarding sludge management practices.

2. Sludge treatment, storage and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or results in groundwater contamination.

3. Due to mitigate: The Discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal which has a likelihood of adversely affecting human health or the environment.

4. The discharge of biosolids shall not cause waste material to be in a position where it is, or can be carried from the sludge treatment and storage site and deposited in the waters of the State.

5. The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.

6. For sludge that is applied to the land, placed on a surface disposal site, or fired in a biosolids incinerator as defined in 40 CFR 503, the Discharger shall submit an annual report to the U.S. EPA and the Regional Water Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR 503, postmarked February 15 of each year, for the period covering the previous calendar year.

7. Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.

8. Permanent on-site sludge storage or disposal activities are not authorized by this permit. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.

9. Sludge Monitoring and Reporting Provisions of this Regional Water Board's "Standard Provisions and Reporting Requirements", dated August 1993, apply to sludge handling, disposal and reporting practices.

10. The Regional Water Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

F. PROVISIONS

1. Permit Compliance and Rescission of Previous Waste Discharge Requirements

The Discharger shall comply with the limitations, prohibitions, and other provisions of this Order on the effective date of this NPDES Permit. Requirements prescribed by this Order supersede the requirements prescribed by Order Nos. 00-059 and R2-2002-0111. Order Nos. 00-059 and R2-2002-0111 are hereby rescinded upon the effective date of this Order.

2. Effluent Characterization for Selected Constituents

The Discharger shall monitor and evaluate the discharge from Outfall E-001 for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001 Letter, according to its approved sampling plan submitted under the August 6, 2001 Letter. The Discharger shall monitor, for a minimum one sampling event for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001 Letter, during the permit term. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Water Board's August 6, 2001 Letter under Effluent Monitoring for Major Dischargers.

Reporting: A final report that presents all the data shall be submitted to the Regional Water Board no later than 180 days prior to the Order expiration date. This final report shall be submitted with the application for permit reissuance.

3. Ambient Background Receiving Water Study

The Discharger shall collect or participate in collecting background ambient receiving water monitoring for priority pollutants that is required to perform RPA and to calculate effluent limitations. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the receiving water at a point after the discharge has mixed with the receiving waters. This provision may be met through monitoring through the Collaborative Napa River Receiving Water Study, or a similar ambient monitoring program for the Napa River. This permit may be reopened, as appropriate, to incorporate effluent limits or other requirements based on Regional Water Board review of these data.

Final Report: The Discharger shall submit a final report that presents all the data to the Regional Water Board 180 days prior to Order expiration. This final report shall be submitted with the application for permit reissuance.

4. Mixing Zone Study

The Discharger shall comply with the following tasks and deadlines:

Tasks	Compliance Date
a. *Study Plan.* The Discharger shall prepare a mixing zone study plan, acceptable to the Executive Officer. The plan shall describe the methodology for evaluating an appropriate dilution credit for the discharge.	June 1, 2005.
b. *Study Commencement.* Initiate the study upon Executive Officer's approval.	Within 30 days of Executive Officer approval or by November 1, 2005, whichever is later.

Tasks	Compliance Date
c. *Report*. Submit a report, acceptable to the Executive Officer, summarizing the study results. The report shall propose a dilution credit for wet weather WQBELs' calculation.	If approval of study plan is granted before October 1, final Report will be submitted 3 months after the wet season, i.e., July 31, 2006. If approval is granted after October 1, final Report will be submitted three months after the subsequent year's wet season, i.e., July 31, 2007.
d. *Feasibility Analysis.* The Discharge shall also submit a feasibility analysis, acceptable to the Executive Officer, demonstrating feasibility to comply with the final WQBELs calculated using the identified dilution credit.	Within 60 days after the mixing zone study report is submitted.

5. Cyanide Compliance Schedule and SSO Study

The Discharger shall comply with the following tasks and deadlines:

Tasks	Compliance Date
a. *Compliance Schedule.* The Discharger should participate in regional studies as described in findings (under Cyanide) above. Results from these studies should enable the Regional Water Board to determine compliance with final WQBELS during the next permit reissuance.	Progress reports as part of annual self-monitoring reports.
b. *SSO Study.* The Discharger shall actively participate in the development of regional SSOs for cyanide. Participation through BACWA studies satisfies this task.	Progress reports by cyanide work group due January 31st of each year until completion
c. Conduct evaluation of compliance attainability with limitations derived using new objectives if developed.	3 years of effective date of this Order.

6. Pollution Prevention and Pollutant Minimization Program

a. The Discharger shall continue to improve its existing Pollution Prevention Program to reduce loadings of pollutants to the plant and therefore to the receiving waters.

b. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28th of each year. Annual reports shall cover January through December of the preceding year. Annual reports shall include at least the following information:

i. *A Brief Description of the Plant, Plant Processes, and Service Area.*

ii. *A Discussion of the Current Pollutants of Concern.* Periodically, the Discharger shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen. In particular, the Discharger shall address those pollutants for which there is a reasonable potential to cause or contribute to exceedance of WQOs/WQC, specifically, copper, nickel, mercury, selenium, cyanide, TCDD TEQ, and tributyltin.

iii. *Identification of Sources for the Pollutants of Concern*. This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger shall also

identify sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.

iv. *Identification of Tasks to Reduce the Sources of the Pollutants of Concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement tasks itself or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so.

v. *Outreach to Employees.* The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of *concern* into the plant. The Discharger may provide a forum for employees to provide input to the Program.

vi. *Continuation of Public Outreach Program.* The Discharger shall prepare a public outreach program to communicate pollution prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach program, conducting plant tours, and providing public information in newspaper articles or advertisements, radio, television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the target audiences. The Discharger shall coordinate with other agencies as appropriate.

vii. *Discussion of Criteria Used to Measure the Program's and Tasks' Effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iv), b. (v), and b. (vi).

viii. *Documentation of Efforts and Progress.* This discussion shall detail all the Discharger's activities in the Pollution Prevention Program during the reporting year.

ix. *Evaluation of Program's and Tasks' Effectiveness.* The Discharger shall use the criteria established in b. (vii) to evaluate the Program's and tasks' effectiveness.

x. *Identification of Specific Tasks and Time Schedules for Future Efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks to more effectively reduce the amount of pollutants to the plant, and subsequently in its effluent.

c. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:

i. A sample result is reported as detected, but not quantified (less than the Minimum Level) and the effluent limitation is less than the reported Minimum Level,

ii. A sample result is reported as not detected (less than the Method Detection Limit) and the effluent limitation is less than the Method Detection Limit; or,

iii. The dioxin TEQ exceeds the WQO (0.014 pg/L); then

The Discharger shall expand its existing Pollution Prevention Program to include the reportable priority pollutant. A priority pollutant becomes a reportable priority pollutant (1) when there is evidence that it is present in the effluent above an effluent limitation and either (c)(i) or c(ii) is triggered or (2) if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

d. If triggered by the reasons in c. above and notified by the Executive Officer, the Discharger's Pollution Prevention Program shall, within 6 months, also include the following:

i. An annual review and semiannual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data.

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data.

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation.

iv. Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy.

v. An annual status report that shall be sent to the RWQCB including the following:
(1) All Pollution Prevention monitoring results for the previous year
(2) A list of potential sources of the reportable priority pollutant(s)
(3) A summary of all actions undertaken pursuant to the control strategy
(4) A description of actions to be taken in the following year.

e. To the extent that the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.

f. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in the Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

7. Mercury Mass Loading Reduction

If mass loading for mercury exceeds the trigger level specified in B(iii)(4) of this Order, then the following actions shall be initiated and subsequent reports shall include but not be limited to the following:

a. *Notification*: Any exceedance of the trigger specified in Effluent Limitation B(iii)(4) shall be reported to the Regional Water Board in accordance with Section E.8.b. in the Standard Provisions and Reporting Requirements (August, 1993).

b. *Identification of the problem*: Resample to verify the increase in loading. If resampling confirms that the mass loading trigger has been exceeded, determine whether the exceedance is flow or concentration-related. If the exceedance is flow related, identify whether it related to changes in reclamation, increase in the number of sewer connections, increases in infiltration and inflow (I/I), wet season conditions, or unknown sources. If the exceedance is concentration-related, identify whether it is related to industrial, commercial, residential, or unknown sources.
c. Investigation of corrective action: Investigate the feasibility of the following actions: • Improving public education and outreach • Reducing inflow and infiltration (I/I) • Increasing reclamation Within 60 days after confirmed exceedance of trigger, develop a plan and include time schedule as short as practicable, acceptable to the Executive Officer to implement all reasonable actions to maintain mercury mass loadings at or below the mass loading trigger contained in Effluent Limitation B(iii)(4).
d. *Investigation of aggressive prevention/reduction measures.* In the event the exceedance is related to growth and the plan required under (c) above is not expected to keep mercury mass loadings below the mass loading trigger, the Discharger shall submit a plan, acceptable to the Executive Officer. The plan should include an initiative to work with the local planning department to investigate the feasibility and potential benefits of requiring water conservation, reclamation, and dual plumbing for new development. This plan should be implemented as soon as practicable.

8. Whole Effluent Acute Toxicity

Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

a. Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour bioassays.

b. Test organisms shall be rainbow trout and fathead minnow tested concurrently. The Discharger will continue to perform the flow-through bioassay using fathead minnow, while concurrently running a static renewal test using rainbow trout. Concurrent tests will be performed for the first 12 months after the Order becomes effective, after which time bioassay data will be evaluated and the Discharger may make a request to the Executive Officer for reduction to one fish species. The Discharger must show compliance with the acute toxicity limitation, and that any observed acute toxicity has been observed in only one of these two fish species. If approved in writing by the Executive Officer, compliance may then be determined using the most sensitive of these two species.

c. All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,"(currently 5th Edition), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

9. Whole Effluent Chronic Toxicity

The Discharger shall monitor and evaluate the effluent from the treatment plant for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective. Compliance with this requirement shall be achieved in accordance with the following.

a. The Discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.

b. If data from routine monitoring exceed either of the following evaluation parameters, then the Discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall be performed on a monthly basis.

c. Chronic toxicity evaluation parameters:

(1) For wet season discharges:

(i) A three sample median value of 10 TUc; and
(ii) A single sample maximum value of 20 TUc.

(2) For dry season discharges: a single sample maximum value of 1 TUc.

(3) These parameters are defined as follows:

(a) Three-sample median: A test sample showing chronic toxicity greater than 10 TUc for wet season discharge represents an exceedance of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 10 TUc.

(b) TUc (chronic toxicity unit): A TUc equals 100/NOEL (e.g., If NOEL = 100, then toxicity = 1 TUc). NOEL is the no observed effect level determined from IC, EC, or NOEC values.

(c) The terms IC, EC, NOEL and NOEC and their use are defined in **Attachment A** of the Self-Monitoring Program (SMP).

d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.

e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the Discharger shall initiate a chronic toxicity reduction evaluation (TRE).

f. The TRE shall be conducted in accordance with the following:

(1) The Discharger shall submit a TRE workplan acceptable to the Executive Officer. The Regional Water Board encourages the Discharger to prepare a generic TRE workplan and keep it on hand should it be needed for a toxicity event. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the subject discharge and discharge facilities.

(2) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.

(3) The TRE shall be conducted in accordance with an approved workplan.

(4) The TRE needs to be specific to the discharge and Discharger facility, and may be in accordance with current technical guidance and reference materials including U.S. EPA guidance materials. TRE should be conducted as a tiered evaluation process, such as summarized below:

(a) Tier 1 consists of basic data collection (routine and accelerated monitoring).
(b) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
(c) Tier 3 consists of a toxicity identification evaluation (TIE).
(d) Tier 4 consists of evaluation of options for additional effluent treatment processes.
(e) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
(f) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.

(5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.

(6) The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies should be employed.

(7) As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.

(8) Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.

(9) The Regional Water Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

g. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in **Attachment A** of the SMP. The Discharger shall comply with these requirements as applicable to the discharge.

10. Optional Mass Offset

The Discharger may submit to the Regional Water Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Regional Water Board may modify this Order to allow an approved mass offset program.

11. Pretreatment Program

a. Pretreatment Program: The Discharger shall implement and enforce its approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403), pretreatment standards promulgated under Section 307(b), 307(c), and 307(d) of the Clean Water Act, pretreatment requirements specified under 40 CFR 122.44(j), and the requirements in **Attachment D**, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to:

   i. Enforcement of National Pretreatment Standards of 40 CFR 403.5 and 403.6;

   ii. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the General Pretreatment regulations (40 CFR Part 403) and its approved pretreatment program;

   iii. Submission of reports to U.S. EPA, the State Water Board, and the Regional Water Board, as described in **Attachment D** "Pretreatment Requirements".

   iv. Evaluate the need to revise local limits under 40 CFR 403.5(c)(1); and within 180 days after the effective date of this Order, submit a report acceptable to the Executive Officer describing the changes with a plan and schedule for implementation.

b. The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board, or the U.S. EPA may take enforcement actions against the Discharger as authorized by the Clean Water Act.

12. Copper Local Limit

The new local limit for copper, specifically, an increase from the existing maximum allowable industrial loading of 2.8 lb/day to 5.12 lb/day, will become effective upon the Discharger's completion of the following tasks:

a. Within 90 days of the permit adoption, pursuant to 40 CFR 403.18 for substantial modifications, the Discharger shall issue a public notice of the intent to increase local limit and hold a hearing if there is significant public interest.

b. Documentation of completion of the above task, to the Executive Officer's satisfaction. The new local limit shall become effective on the day of completion of Task a. above.

13. Sanitary Sewer Management Plan

The Discharger shall fully participate in BACWA's collaborative program to develop guidelines for sanitary sewer management plans (SSMPs). The Discharger shall develop and implement a Discharger-specific SSMP, acceptable to the Executive Officer, as quickly as feasible once this activity is required by the Regional Water Board or its Executive Officer. As part of its SSMP, the Discharger shall report sanitary sewer overflows electronically as soon as the Regional Water Board's electronic sanitary sewer overflows reporting system is available, even if that capability precedes the development of the Discharger's SSMP.

14. Wastewater Facilities, Review and Evaluation, and Status Reports

a. The Discharger shall operate and maintain its wastewater collection, treatment, and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

b. The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.

c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its wastewater facilities and operation practices, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects.

15. Operations and Maintenance Manual, Review and Status Reports

a. The Discharger shall maintain an O & M manual as described in the findings of this Order for the Discharger's wastewater facilities. The O & M manual shall be maintained in usable condition, and available for reference and use by all applicable personnel.

b. The Discharger shall regularly review, revise, or update, as necessary, the O & M manual(s) so that the document(s) may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its O&M manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable changes to, its operations and maintenance manual.

16. Contingency Plan, Review and Status Reports

a. The Discharger shall maintain a contingency plan as required by Regional Water Board Resolution 74-10 (available online—see Standard Language and Other References Available Online, below), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

b. The Discharger shall regularly review, and update as necessary, the contingency plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.

c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its contingency plan review and update. The Discharger shall also include, in each annual self-monitoring Report, a description or summary of review and evaluation procedures, and applicable changes to, its contingency plan.

17. 303(d)-Listed Pollutants, Site-Specific Objective and TMDL Status Review

The Discharger shall participate and support the development of TMDLs or SSOs. By January 31 of each year, the Discharger shall submit an update to the Regional Water Board to document its participation efforts toward development of the TMDL(s) or SSO(s). The Discharger can submit updates through the regional BACWA studies for these pollutants. Regional Water Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

18. New Water Quality Objectives

As new or revised WQOs come into effect for the Bay and contiguous waterbodies (whether statewide, regional, or site specific), effluent limitations in this Order will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs.

19. Self-Monitoring Program (SMP)

The Discharger shall comply with the SMP for this Order as adopted by the Regional Water Board. The SMPs may be amended by the Executive Officer pursuant to U.S. EPA regulation 40 CFR 122.63.

20. Standard Provisions and Reporting Requirements

The Discharger shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (the Standard Provisions), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply.

21. Change in Control or Ownership

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board. To assume responsibility for and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions and Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, and a violation of the California Water Code.

22. Order Reopener

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances:

(1) If present or future investigations demonstrate that the discharge(s) governed by this Order will or have a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;

(2) If new or revised WQOs come into effect for the San Francisco Bay estuary and contiguous waterbodies (whether statewide, regional, or site specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications;

(3) If translator or other water quality studies provide new information and a basis for determining that a permit condition(s) should be modified.

(4) If new or site-specific objectives for copper and/or cyanide are not anticipated to be effective by December 31, 2007, and applicable regulations allow for an extension of the January 1, 2008 compliance schedule for the WQBELs contained in this Order. In such a case, the Order may be modified to shorten or extend the compliance schedule.

The Discharger may request Order modification based on (2), (3), and (4) above or on any other valid legal basis. The Discharger shall include in any such request an antidegradation and antibacksliding analysis, if applicable.

23. NPDES Permit

This Order shall serve as an NPDES permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on May 1, 2005, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the Order shall not become effective until such objection is withdrawn.

24. Order Expiration and Reapplication

a. This Order expires on March 31, 2010.

b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of all available water quality data including conventional pollutant data from no less than the most recent three years, and of toxic pollutant data no less than from the most recent five years, in the discharge and receiving water. Additionally, the Discharger must include with the application the final results of any studies that may have bearing on the limits and requirements of the next permit. Such studies, for example, may include dilution studies, translator studies and alternate bacteria indicator studies.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 20, 2005.

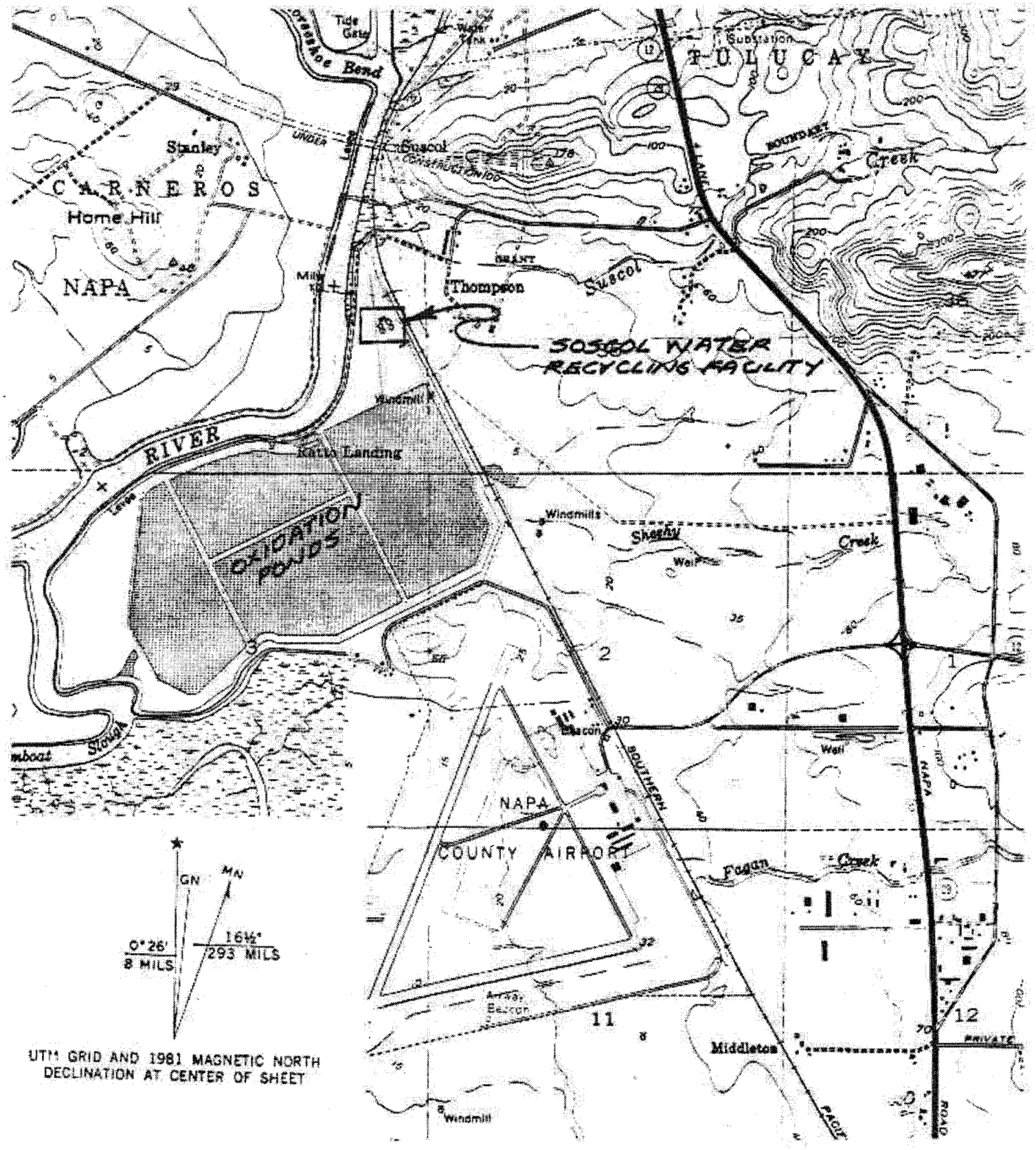
BRUCE H. WOLFE
Executive Officer

Attachments

A. Discharge Facility Location Map
B. Discharge Facility Treatment Process Flow Diagram
C. Self-Monitoring Program, Part B
D. Part I - Pretreatment Requirements
   Part II – April 11, 2005, Response to Regional Water Board staff's review of the July 2003 Soscol Water Recycling Facility Local Limits Report
E. Fact Sheet
F. Discharger's Feasibility Study
G. State Water Board Technical Report
H. The following documents are part of this Order but are not physically attached due to volume. They are available on the Internet at: http://www.waterboards.ca.gov/sanfranciscobay/Download.htm.
   - Self-Monitoring Program, Part A (August 1993)
   - Standard Provisions and Reporting Requirements, August 1993
   - Regional Water Board Resolution No. 74-10
   - Statistical Analysis of Pooled Data from Regionwide Ultraclean Mercury Sampling for Municipal Dischargers, June 2001
   - August 6, 2001 Regional Water Board staff letter, "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy"

ATTACHMENT A

Location Map



UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

LOCATION MAP
FROM U.S. GEOLOGICAL SURVEY MAP,
PHOTOREVISED 1981
SOSCOL WATER RECYCLING FACILITY
NAPA, CALIFORNIA

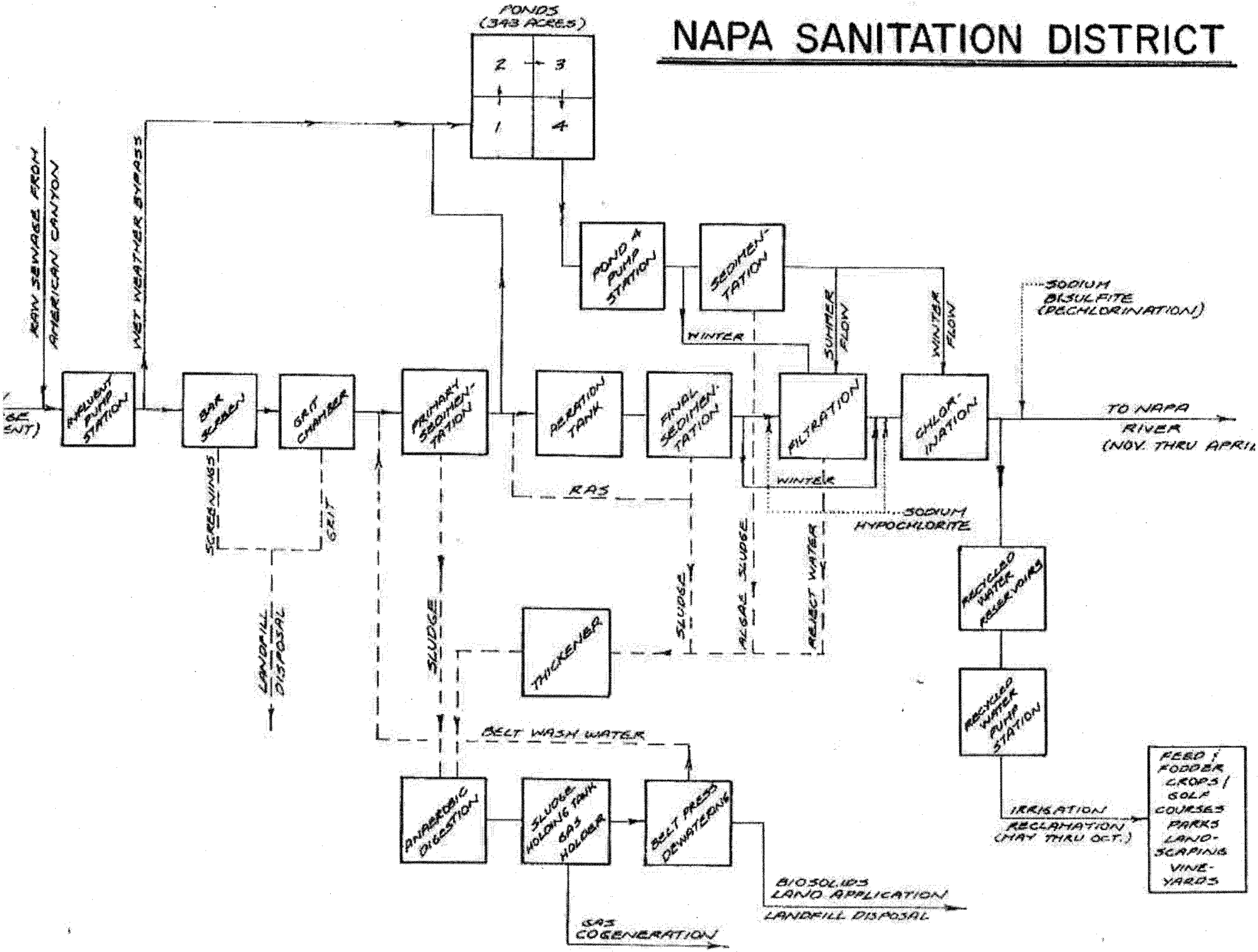
SEPTEMBER, 1998 SHT 1 of 1

ATTACHMENT A

ATTACHMENT B

Treatment Process Flow Diagram

NAPA SANITATION DISTRICT



ATTACHMENT C

Self-Monitoring Program
Part B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

NAPA SANITATION DISTRICT
NAPA COUNTY

NPDES PERMIT NO. CA0037575
ORDER NO. R2-2005-0008

Consists of:
Part A (not attached)
Adopted August 1993

and

Part B (Attached)
Adopted: April 20, 2005
Effective: May 1, 2005

Note: Part A, Standard Provisions and Reporting Requirements for NPDES Surface Water Discharger Permits (dated August 1993), and Resolution No. 74-10 referenced in this Self-Monitoring Program are not attached but are available for review or download on the Regional Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay/Download.htm

SELF MONITORING PROGRAM – PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
A-002	At any point in the Napa Sanitation District treatment facilities' headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present (may be the same as E-001-D).
E-001-D	At any point in the treatment facility, at which point adequate contact with the disinfectant is assured.
E-001-P	At any point in the oxidation pond at or near the gate where effluent is discharged to the Napa River.

C. RECEIVING WATERS

Station	Description
CC-1	At any point in the Napa River, located by the Southern Crossing Bridge approximately 2000 feet upstream from the point of discharge from outfall E-001.
CC-2	In the Napa River, the area located within a 100-foot radius from the point of discharge from the bypass facilities for the Discharger pump station near Soscol Creek.
CC-3	In the Napa River, the area immediately above the diffuser system for outfall E-001.
CC-4	At any point in the Napa River, located approximately 1000 feet downstream from the point of discharge outfall E-001.
CC-5	At any point in the Napa River, located approximately 2000 feet downstream from the point of discharge outfall E-001.

D. GROUND WATER

Station	Description
G-2	A well located at northeast corner of pond 1, on the Discharger's property easterly of the Napa River.

E. LAND OBSERVATIONS

Station	Description
L-1 through L-n	Located at corners and midpoints of the perimeter around the treatment facilities. A sketch showing the locations of these stations should accompany the first report complying with this Order.

F. STABILIZATION PONDS

Station	Description
P-1 through P-n	Located at corners and midpoints of each stabilization ponds.

G. OVERFLOWS AND BYPASSES

Station	Description
O-1 through O-n	Bypass or overflows from manholes, pump stations, or collection system.

Note: Initial self-monitoring report to include map and descriptions of each known bypass or overflow location.

II. SCHEDULE OF SAMPLING, ANALYSES, AND OBSERVATIONS

This Schedule of sampling, analyses, and observations shall be that given in Table 1 of this self-monitoring program.

Napa Sanitation District
NPDES Permit No. CA 0037575
Order No. R2-2005-0008

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS AND ANALYSIS [1][17]
NAPA SANITATION DISTRICT

Sampling Station:	**A-002**		**E-001**			**E-001-D**			**E-001-P [16]**	**CC-3**	**All Other CC**	**G-2**	**ALL L and P**	**ALL OV**
Type of Sample: [notes]	**C-24**	**Cont.**	**G**	**C-24**	**Cont.**	**G**	**C-24**	**Cont.**	**G**	**G**	**G/O**	**G/O**	**O**	**G/O**
Sampling Required:	**Year-round**		**While discharging to Napa River**			**While discharging to Napa River**			**While Discharg-ing to Napa River**	**While Discharg-ing to Napa River**	**While Discharg-ing to Napa River**	**Year-round**	**Year-round**	**Year-round**
Flow Rate (MGD) [2]		D			D				E/D					
BOD, 5-day, 20 °C (mg/L) [3]	2/W			2/W					E/D					
Total Suspended Solids (mg/L & kg/day) [3]	3/W			3/W					E/D					
Oil and Grease (mg/L & kg/day) [4]				Q										
Chlorine Residual (mg/L) [5]						Cont. or H								
Enterococcus (colonies/100 mL) [6]						3/W			E/D	M		2/Y		
Turbidity (NTU)				2/M						M	M			
pH (Standard Units) [7]			D						E/D	M	M	2/Y		
Temperature (°C)			D						E/D	M	M			
Dissolved Oxygen (mg/l & %-Saturation)			D						E/D	M	M			
Chlorides (mg/L)				M						M	M			

Sampling Station:	**A-002**		**E-001**			**E-001-D**			**E-001-P [16]**	**CC-3**	**All Other CC**	**G-2**	**ALL L and P**	**ALL OV**
Type of Sample: [notes]	**C-24**	**Cont.**	**G**	**C-24**	**Cont.**	**G**	**C-24**	**Cont.**	**G**	**G**	**G/O**	**G/O**	**O**	**G/O**
Sulfides, total and dissolved (mg/L) (if DO < 2.0 mg/L)			D							M	M			
Ammonia Nitrogen (mg/L & kg/day)				M						M		2/Y		
Nitrate Nitrogen (mg/L & kg/day)												2/Y		
Nitrite Nitrogen (mg/L & kg/day)												2/Y		
Total Organic Nitrogen (mg/L & kg/day)												2/Y		
Total Phosphate (m/L & kg/day)												2/Y		
Un-ionized Ammonia Nitrogen (mg/L as N)										M				
Total Dissolved Solids (mg/L)												2/Y		
Hardness (mg/L) [8]										M				
Salinity (ppt) [8]										M				
Chlorophyll-α (µg/L)										M				
Acute Toxicity (% Survival) [9]								M						
Chronic Toxicity (TUc) [10]							Q							
Copper (µg/L)				M										
Nickel (µg/L)				M										
Mercury (µg/L & kg/month) [11]			M											

Sampling Station:	A-002		E-001			E-001-D			E-001-P [16]	CC-3	All Other CC	G-2	ALL L and P	ALL OV
Type of Sample: [notes]	C-24	Cont.	G	C-24	Cont.	G	C-24	Cont.	G	G	G/O	G/O	O	G/O
Selenium (µg/l & kg/month)				M										
Cyanide (µg/l)			M											
2,3,7,8-TCDD and Congeners (µg/l)			2/Y [12]											
Tributyltin (µg/L)				2/Y [13]										
All priority pollutants [14]			In accordance with Provision F.2 and F.3											
Standard Observations [15]											M		W	E

Legend for Table 1:

TYPES OF SAMPLES
G = grab samples
C-24 = 24-hour composite sample
Cont. = continuous sampling
O = observation

TYPES OF STATIONS
A = treatment facility influent stations
E = waste effluent stations
CC = receiving water stations
L = treatment facilities perimeter stations
P = basin and/or pond levee stations
G = ground waters stations
O = overflow and bypass stations

FREQUENCY OF SAMPLING
E = each occurrence
D = once each day
2W = every two weeks
M = once each month, during wet and dry season
2/M = two times per month
Q = quarterly
H = every hour
Cont. = continuous
2/W = two time per week
3/W = three days per week
2/Y = once in wet season, once in dry season
E/D = each occurrence or at least once per day

Footnotes for Table 1

[1] Composite sampling: 24-hour composites may be made up of discrete grabs collected over the course of a day and volumetrically or mathematically flow-weighted. Samples for inorganic pollutants may be combined prior to analysis. Samples for organic pollutants should be analyzed separately. If only one grab sample will be collected, it should be collected during periods of maximum peak flows. Samples shall be taken on random days.

[2] Flow Monitoring:
Flows shall be monitored continuously and the following shall be reported in monthly self-monitoring reports:

Influent and Effluent:

Daily:	Flow Rate (MGD)
Monthly:	Average Daily Flow Rate (MGD)
	Maximum Daily Flow Rate (MGD)
	Minimum Daily Flow Rate (MGD)
	Total Flow Volume (MG)
	E-001-P: Estimated flow volume (MG) based on Pond levels measured before and after discharge.

[3] BOD & TSS:
Influent analyses for BOD_5 and total suspended solids are required 2 days and 3 days a week, respectively, during the wet season and during dry season is required.

The percent removal for BOD and TSS shall be reported for each calendar month, in accordance with Effluent Limitation B(iii)(2).

[4] Oil & Grease Monitoring:
Each Oil & Grease sampling event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

[5] Chlorine Residual:
Monitor dechlorinated effluent continuously or, at a minimum, every hour. Report, on a daily basis, both maximum and minimum concentrations, for samples taken both prior to, and following dechlorination. If continuous monitoring is used, the Discharger may record discrete readings from the continuous monitoring every hour on the hour, and report, on a daily basis, the maximum concentration observed following dechlorination. Total chlorine dosage (kg/day) shall be recorded on a daily basis.

[6] The Indexx-Enterolert method or the U.S. EPA Method 1600 are approved for use by the Discharger for the enterococci determination. Upon collection of 12 months of data demonstrating consistent compliance with the effluent bacterial limitations, the Discharger may submit a request to the Executive Officer for a reduction in sampling frequency.

[7] pH. In addition to daily monitoring of the discharge, the Discharger shall collect and analyze one sample of the treated effluent prior to initiating a period of discharge. Discharge may not be initiated until the pH of the treated effluent is within the allowable pH range.

[8] Sampling for hardness and salinity shall occur at the upstream receiving water station.

[9] Bioassays:
Monitoring of the bioassay water shall include, on a daily basis during the test, the parameters specified in the U.S. EPA-approved method, such as pH, dissolved oxygen, ammonia nitrogen, and temperature. These results shall be reported. If a violation of acute toxicity requirements occurs or if the control fish survival

rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue back to back until compliance is demonstrated.

[10] Critical Life Stage Toxicity Test shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Sections V and VI of the Self-Monitoring Program contained in this Order.

[11] The Discharger may, at its option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (U.S. EPA 1669) to the maximum extent practicable and ultra-clean analytical methods (U.S. EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as U.S. EPA 245), if that alternative method has an ML of 2 ng/L or less.

[12] Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of U.S. EPA Method 1613; the Discharger shall collect 4-liter samples to lower the detection limits to the greatest extent practicable. Alternative methods of analysis must be approved by the Executive Officer. The Discharger shall achieve MLs for 2,3,7,8-TCDD and all other 16 congeners using U.S. EPA 1613 developed in collaboration with BACWA as levels that were achievable by BACWA participants (see BACWA Letter dated April 23, 2002). These MLs range from 5 to 50 pg/L.

[13] The Discharger shall use Batelle N-0959-2606 or EBMUD method for treated wastewater, the minimum level is 20 ng/L. This ML was developed in collaboration with BACWA as level that was achievable by BACWA participants (see BACWA Letter dated April 23, 2002).

[14] Sampling for all priority pollutants in the SIP is addressed in a letter dated August 6, 2001, from Regional Water Board Staff: "Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (not attached, but available for review or download on the Regional Water Board's website at www.waterboards.ca.gov/sanfranciscobay/).

[15] Receiving water observations shall include only those contained in Items D.1.a, D.1.b, D.1.c, and D.3 of Part A (August 1993) of the Self-Monitoring Program. Perimeter observations shall include only D.5.a (odors) of Part A of the same program.

[16] The Discharger shall request to the Regional Water Board when it is necessary to discharge directly from the oxidations ponds into the Napa River to protect its treatment facilities. The Discharger shall sample the discharge according to the schedule listed in Table 1 above for the discharge and report the results with the monthly self-monitoring report of which month the discharge occurs. Sample collection will not be required if weather and flow conditions would endanger personnel collecting oxidation pond effluent samples. The monthly self-monitoring report shall note such occasions.

[17] Testing conducted under the pretreatment and reclamation programs may be used to satisfy the monitoring requirements of this Order. All analyses shall be performed using current U.S. EPA methods, as specified in 40 CFR Part 136. Metals units are expressed as total recoverable metals.

Tables 2 and 3 below list the pretreatment requirements.

Table 2. Pretreatment Monitoring Requirements

Constituents	Sample Locations and Frequency		
	Influent A-002	Effluent E-001	Biosolids
VOC	2/Y	2/Y	2/Y
BNA	2/Y	2/Y	2/Y
Hexavalent Chromium [1]	M	M	2/Y
Metals [2]	M	M	2/Y
Mercury	M	M	2/Y
Cyanide	M	M	2/Y

Constituents	Sample Locations and Frequency		
	Influent A-002	Effluent E-001	Biosolids
Chlorinated Pesticides and PCBs	2/Y	2/Y	2/Y
Organophosphate Pesticides	2/Y	2/Y	2/Y

Legend for Table 2:

M	=	once each month
2/Y	=	twice each calendar year (at about 6 month intervals, once in the dry season, once in the wet season)
VOC	=	volatile organic compounds
BNA	=	base/neutrals and acids extractable organic compounds

Footnote for Table 2:

[1] Total chromium may be substituted for hexavalent chromium at the Discharger's discretion.

[2] The parameters are copper, lead, mercury, nickel, silver, zinc, and total chromium if the Discharger elects to substitute total chromium for hexavalent chromium.

Table 3. Pretreatment Monitoring: Analytical Methods and Sample Type

Constituent	Suggested Analytical Methods	Sample Type	
		A-002 & E-001	Biosolids
VOC [1]	624/8260	grab	grab
BNA [1]	625/8270, 610/8270	24-hour composite	grab
Hexavalent chromium [2]	*Standard Methods* 3500	grab	grab
Metals [3]	GFAA, ICP, ICP-MS	24-hour composite	grab
Mercury	EPA 245, 1631, 7471 (SW846)	24-hour composite	grab
Cyanide	*Standard Methods* 4500-CN^- C or I, 9012A (SW846)	grab	grab
Chlorinated pesticides and PCBs	EPA 608/8080	24-hour composite	grab
Organophosphate pesticides	EPA 614/8140	24-hr composite	grab

Footnote for Table 3:

[1] GC/MS methods used must be able to quantify to an equivalent level as applicable GC methods (EPA 601, 602, 603, 604, 606).

[2] The Discharger may elect to run total chromium instead of hexavalent chromium.

[3] Copper, lead, nickel, silver, zinc, total chromium (if the Discharger elects to run total chromium instead of hexavalent chromium).

III. MODIFICATIONS TO PART A OF SELF-MONITORING PROGRAM

A. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.

B. Section C.2.h of Part A shall be amended as follows:

h. When any type of bypass occurs, except for bypasses that are consistent with Prohibition 2, flow volume shall be estimated and samples shall be collected for Table 1 E-001-P constituents at all affected discharge points for the duration of the bypass. Table 1 requirements for sample type (grab or composite) and sampling frequency will be followed.

C. Sections C.3. and C.5. are satisfied by participation in the Regional Monitoring Program.

D. Modify Section F.1 as follows:

Spill Reports
A report shall be made of any spill of oil or other hazardous material. The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or Discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to the Regional Water Board: (510) 622 - 5633, (510) 622-2460 (FAX).
During non-office hours, to the State Office of Emergency Services:
Current telephone number: (800) 852 - 7550.

A report shall be submitted to the Regional Water Board within five (5) working days following telephone notification, unless directed otherwise by Regional Water Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall contain information relative to:

E. Modify Section F.2 (first paragraph) as follows:

Reports of Plant Bypass, Treatment Unit Bypass and Order Violation
The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13. In the event the Discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

(remainder of F.2 is unchanged)

F. Modify Section F.4 as follows:

Self-Monitoring Reports
For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. The report shall be submitted to the Regional Water Board on the first day of the second month after the reporting period ends.

[And add at the end of Section F.4 the following:]

g. If the Discharger wishes to invalidate any measurement, the letter of transmittal will include: a formal request to invalidate the measurement; the original measurement in question; the reason for invalidating the measurement; all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.); and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Water Board staff, and will be based solely on the documentation submitted at this time.

h. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supersede.

G. Add at the end of Section F.5, Annual Reporting, the following:

d. A plan view drawing or map showing the Discharger's facility, flow routing and sampling and observation station locations.

H. Add as Section F.6 the following:

Reports of Wastewater Overflows
The Regional Water Board developed an electronic sanitary sewer overflow reporting system, overflows of sewage from the Discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Regional Water Board in accordance with the requirements specified in the Executive Officer's letter (*Requirement for Electronic Reporting of Sanitary Sewer Overflows*) dated November 4, 2004. In the event the internet database in not available, the Discharger shall report the overflow by voicemail at 510-622-5633.

I. Amend Section E as Follows:

Recording Requirements – Records to be Maintained
Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including SMP requirements, shall be maintained by the Discharger in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to Regional Water Board staff. These records shall be retained by the Discharger for a minimum of 3 years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Regional Water Board or by the Regional Administrator of U.S. EPA, Region IX.

Records to be maintained shall include the following:

1. Parameter Sampling and Analyses, and Observations
For each sample, analysis, or observation conducted, records shall include the following:

a. Identity of the parameter.
b. Identity of the sampling or observation station, consistent with the station descriptions given in this SMP.
c. Date and time of the sampling or observation.
d. Method of sampling (grab, composite, other method).
e. Date the analysis was started, and name of personnel or contract laboratory performing the analysis.
f. Reference or description of the procedure(s) used for sample preservation and handling, and analytical method(s) used.
g. Calculations of results.
h. Analytical method detection limits and related quantitation parameters.
i. Results of the analyses or observations.

2. Flow Monitoring Data
For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:
a. Total flow or volume for each day.
b. Maximum, minimum, and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids
a. For each treatment unit process that involves solid removal from the wastewater stream, records shall include the following:
(1). Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month
(2). Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

b. For final dewatered sludge from the treatment plant as a whole, records shall include the following:
(1). Total volume and/or mass quantification of dewatered sludge, for each calendar month.
(2). Solids content of the dewatered sludge.
(3). Final disposition of dewatered sludge (point of disposal location and disposal method).

4. Disinfection Process
For the disinfection process, records shall be maintained documenting process operation and performance, including the following:
a. For bacteriological analyses:
(1). Date and time of each sample collected.
(2). Wastewater flow rate at the time of the sample collection.
(3). Results of the sample analyses (enterococci count).
(4). Required statistical parameters of cumulative enterococci values (e.g., geometric mean for a number of samples or the sampling period identified in waste discharge requirements).

b. For the chlorination process, at least daily average values for the following:
(1). Chlorine residual in contact basin (mg/L).
(2). Chlorine dosage (gal/day).
(3). Dechlorination chemical dosage (kg/day).

5. Treatment Process Bypasses
A chronological log of all treatment process bypasses, other than wet season bypasses addressed elsewhere in this Order and SMP, shall include the following:

a. Identification of the treatment process bypassed.
b. Date(s) and times of bypass beginning and end.
c. Total bypass duration.
d. Estimated total volume.
e. Description of, or reference to other report(s) describing, the bypass event, the cause, corrective actions taken, and any additional monitoring conducted.

IV. ADDITIONS TO PART A OF SELF-MONITORING PROGRAM

Reporting Data in Electronic Format:

The Discharger has the option to submit all monitoring results in electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit the SMRs electronically, the following shall apply:

a. *Reporting Method:* The Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS).

b. *Modification of reporting requirements:* Reporting requirements F.4 in the attached *Self-Monitoring program, Part A*, dated August 1993, shall be modified as follows. In the future, the Regional Water Board intends to modify Part A to reflect these changes.

c. *Monthly Report Requirements:* For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the following:

   i. The report shall be submitted to the Regional Water Board no later than the first day of the second month after the reporting period ends.

   ii. *Letter of Transmittal*: Each report shall be submitted with a letter of transmittal. This letter shall include the following:

      (1) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;

      (2) Details of the violations: parameters, magnitude, test results, frequency, and dates;

      (3) The cause of the violations;

      (4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory;

      (5) If the Discharger wishes to invalidate any measurement, the letter of transmittal will include: a formal request to invalidate the measurement; the original measurement in question; the reason for invalidating the measurement; all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.); and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem. The invalidation of a measurement requires the approval of Regional Water Board staff, and will be based solely on the documentation submitted at this time.

      (6) Signature: The letter of transmittal shall be signed by the Discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

(7) Compliance evaluation summary: Each report shall include a compliance evaluation summary. This summary shall include the number of samples in violation of applicable effluent limits.

(8) Results of analyses and observations.

(9) Tabulations of all required analyses and observations, including parameter, sample date, sample station, and test result.

(10) If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.

(11) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

V. CHRONIC TOXICITY MONITORING REQUIREMENT

A. Test Species and Frequency: The Discharger shall collect 24-hour composite samples of treatment plant effluent at the compliance point station specified in Table 1 of this Self-Monitoring Program, for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

Test Species	Frequency
To be identified by the Screening Phase Study and Approved by the Executive Officer	Quarterly (during wet season) Each occurrence if an emergency discharge lasts longer than 7 days but no more than once each quarter

B. Conditions for Accelerated Monitoring: The Discharger shall accelerate the frequency of monitoring to monthly (or as otherwise specified by the Executive Officer) when there is an exceedance of either of the following conditions:

(1) Wet season discharges:
   a. three sample median value of 10 TUc, and
   b. a single sample maximum value of 20 TUc.

(2) Dry season discharges: a single sample maximum value of 1 TUc.

C. Methodology: Sample collection, handling and preservation shall be in accordance with EPA protocols. The test methodology used shall be in accordance with the references cited in the

Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.

D. Dilution Series: The Discharger shall conduct tests at 100%, 50%, 25%, 12.5%, and 6.25%.The "%" represents percent effluent as discharged.

VI. CHRONIC TOXICITY REPORTING REQUIREMENTS

A. Routine Reporting: Toxicity test results for the current reporting period shall include at a minimum, for each test

1. sample date(s)
2. test initiation date
3. test species
4. end point values for each dilution (e.g. number of young, growth rate, percent survival)
5. NOEC value(s) in percent effluent
6. IC_{15}, IC_{25}, IC_{40}, and IC_{50} values (or EC_{15}, EC_{25} ... etc.) in percent effluent
7. TUc values (100/NOEC, $100/IC_{25}$, and $100/EC_{25}$)
8. Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)
9. NOEC and LOEC values for reference toxicant test(s)
10. IC_{50} or EC_{50} value(s) for reference toxicant test(s)
11. Available water quality measurements for each test (ex. pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

B. Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under Section A item numbers 1, 3, 5, 6(IC_{25} or EC_{25}), 7, and 8.

VII. MONITORING METHODS AND MINIMUM DETECTION LEVELS

The Discharger may use the methods listed in Table 2, above, or alternative test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999).

VIII. SELF-MONITORING PROGRAM CERTIFICATION

I, Bruce H. Wolfe, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Water Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Water Board Order No. R2-2005-0008.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.

3. Is effective as of May 1, 2005.

BRUCE H. WOLFE
EXECUTIVE OFFICER

Attachment: Chronic Toxicity

CHRONIC TOXICITY

DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25}. If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.

D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or

2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

B. Design of the screening phase shall, at a minimum, consist of the following elements:

1. Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer.

2. Two stages:
   a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached).

b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.

3. Appropriate controls.

4. Concurrent reference toxicant tests.

C. The Discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

Table 1. Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	*(Skeletonema costatum)* *(Thalassiosira pseudonana)*	Growth rate	4 days	1
Red alga	*(Champia parvula)*	Number of cystocarps	7–9 days	3
Giant kelp	*(Macrocystis pyrifera)*	Percent germination; germ tube length	48 hours	2
Abalone	*(Haliotis rufescens)*	Abnormal shell development	48 hours	2
Oyster Mussel	*(Crassostrea gigas)* *(Mytilus edulis)*	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	*(Strongylocentrotus purpuratus, S. franciscanus)* *(Dendraster excentricus)*	Percent fertilization	1 hour	2
Shrimp	*(Mysidopsis bahia)*	Percent survival; growth	7 days	3
Shrimp	*(Holmesimysis costata)*	Percent survival; growth	7 days	2
Topsmelt	*(Atherinops affinis)*	Percent survival; growth	7 days	2
Silversides	*(Menidia beryllina)*	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

Table 2. Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	*(Pimephales promelas)*	Survival; growth rate	7 days	4
Water flea	*(Ceriodaphnia dubia)*	Survival; number of young	7 days	4
Alga	*(Selenastrum capricornutum)*	Cell division rate	4 days	4

Toxicity Test Reference:

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, third edition. EPA/600/4-91/002. July 1994.

Table 3. Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay[2]	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater[1] Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

[1] The freshwater species may be substituted with marine species if:

(a) The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or

(b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

[2](a) Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.

(b) Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

ATTACHMENT D
PART I

Pretreatment Requirements

Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program as directed by the Regional Water Board's Executive Officer or the EPA. The EPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.

2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

3. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:

   i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);

   ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);

   iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);

   iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and

   v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.

4. The Discharger shall submit annually a report to the EPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix A entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.

5. The Discharger shall submit semiannual pretreatment reports to the EPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st (for the period January through June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and EPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31st of each year.

7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in Appendix C entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX A
REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31st of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1) **Cover Sheet**

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2) **Introduction**

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Regional Water Board or the EPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3) **Definitions**

This section shall contain a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program.

4) **Discussion of Upset, Interference and Pass Through**

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

a) a description of what occurred;

b) a description of what was done to identify the source;

c) the name and address of the IU responsible

d) the reason(s) why the incident occurred;

e) a description of the corrective actions taken; and

f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing

requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) **Influent, Effluent and Sludge Monitoring Results**

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.
A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) **Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;

b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) **Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Water Board shall also be given.

8) **Federal Categories**

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:

(1) the number of inspections and sampling events conducted for each SIU;

(2) the quarters in which these activities were conducted; and

(3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

(a) in consistent compliance;

(b) in inconsistent compliance;

(c) in significant noncompliance;

(d) on a compliance schedule to achieve compliance, (include the date final compliance is required);

(e) not in compliance and not on a compliance schedule;

(f) compliance status unknown, and why not.

b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:

(1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.

(6) Order to restrict/suspend discharge to the POTW.

(7) Order to disconnect the discharge from entering the POTW.

12) **Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13) **Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14) **Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15) **Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16) **Sludge Storage and Disposal Practice**

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17) **PCS Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18) **Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at U.S. EPA, the State Water Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX B:
REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Regional Water Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1) **Influent, Effluent and Sludge Monitoring**

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.
The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Water Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Water Board's ERS Project Manager for specific details in submitting the monitoring data.
If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the discharger's facility.

2) **Industrial User Compliance Status**

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.
For each SIU on the list, the following information shall be provided:

a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.

b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.

c. Indicate the compliance status of the SIU for the two quarters of the reporting period.

d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

a. Date of latest PCA, PCI or PPE and report.

b. Date of the Discharger's response.

c. List of unresolved issues.

d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at U.S. EPA, the State Water Resources Control Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX C
REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table 5 on Page 8 of the Self-Monitoring Program (SMP).
The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Table 1 of the SMP. Any subsequent modifications of the requirements specified in Table 1 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Table 1 and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

1. **Influent and Effluent Monitoring**

The Discharger shall monitor for the parameters using the required test methods listed in Table 4 on page 7 of the SMP. Any test method substitutions must have received prior written Regional Water Board approval. Influent and Effluent sampling locations shall be the same as those sites specified in the Self-Monitoring Program.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.

C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.

D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

E. A tabulation of the test results shall be provided.

F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

2. **Sludge Monitoring**

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or

C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding

times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.

B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

C. Test Results – Tabulate the test results and include the percent solids.

D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.

ATTACHMENT D
PART II

Response to Water Board Staff's Review of
July 2003 Soscol Water Recycling
Facility Local Limits Report

April 11, 2005

Napa Sanitation District
2005 NPDES Permit Renewal

Response to March 30, 2005 Comments By San Francisco Bay Regional Water Quality Control Board Regarding Soscol Water Recycling Facility Local Limits Verification Report

April 11, 2005

The Napa Sanitation District (District) appreciates the opportunity to submit the following comments on the review of its Soscol Water Recycling Facility Local Limits Report (July 2003) received on April 1, 2005.

Section 2.1 – Sludge Quality Protection Requirements

~~1.The District agrees that 40 CFR 503.13 Table 3 should be used for computing local limits for sludge disposal requirements, and agrees to the values obtained with the Regional Water Quality Control Board (Water Board) consultant's local limits calculations for arsenic (0.33 lb/day MAIL, 0.025 mg/L), cadmium (0.205 lb/day MAIL, 0.015 mg/L), copper (5.0 lb/day MAIL, 0.38 mg/L), and lead (1.35 lb/day MAIL, 0.103 mg/L).~~

~~2.The District was not able to determine how the Water Board's consultant may have arrived at their results for mercury and zinc. The District has provided a computation using 40 CFR 503.13 Table 3, with additional significant figures, as shown in Attachment A. The correct local limit for mercury should be 0.075 lb/day MAIL (0.0057 mg/L), and for zinc it should be 10.0 lb/day MAIL (0.76 mg/L).~~

1. The District has recalculated its proposed local limits using 40 CFR 503 Table 3 for arsenic, cadmium, copper, lead, mercury, and zinc. The Maximum Allowable Industrial Loading (MAIL) was calculated using the following equation (EPA Local Limits Guidance):

$$MAIL = MAHL - L_{dom} - SF$$

where

MAIL = maximum allowable industrial load (lb/day)
MAHL = most limiting maximum allowable headworks load (lb/day)
L_{dom} = typical domestic load (lb/day)
SF = safety factor (10%)

The typical domestic load is used because sludge treatment is a long-term process and any spikes in domestic concentrations will be averaged out over the period. Furthermore, one of the purposes of subtracting out a safety factor is to account for data variability. The District's recalculated local limits for arsenic, cadmium, copper, lead, mercury, and zinc are provided in the following table:

Constituent	2003 Local Limits Report		2005 Revised Local Limits	
	MAIL (lb/day)	Across-the-Board (mg/L)	MAIL (lb/day)	Across-the-Board (mg/L)

Arsenic	0.63	0.048	0.33	0.025
Cadmium	0.46	0.035	0.21	0.016
Copper	7.09	0.538	5.12	0.388
Lead	3.92	0.297	1.35	0.102
Mercury	0.184	0.014	0.075	0.0057
Zinc	23	1.738	10	0.762

Section 2.2 – CCR Toxicity Regulations

~~3.~~2. Although it was not documented in the local limits report, the District *did* evaluate beryllium during the local limits development because it is regulated by the California Code of Regulation (CCR) toxicity regulations (Title 22, Division 4.5, Chapter 11, Article 3). The soluble threshold limit concentration (STLC) and total threshold limit concentration (TTLC) for beryllium are 0.75 mg/L and 75 mg/kg as a wet weight, respectively. Beryllium was sampled in the collection system, influent, primary effluent, and final effluent at detection limits between 0.0001 and 0.0002 mg/L, and in anaerobic sludge digester influent and anaerobic sludge digester effluent (sludge disposal point) at detection limits of 0.2 mg/kg and 0.001 mg/L, respectively. All analytical results for beryllium were below the analytical detection limits. In addition, the detection limits were orders of magnitude below the regulatory threshold levels. Because the following conditions were not met, it was not necessary to proceed with a headworks analysis for beryllium (USEPA *Guidance Manual on the Development and Implementation of Local Discharge Limitations under the Pretreatment Program*, December 1987 [Local Limits Guidance]):

a. The maximum concentration of the pollutant in the POTW's effluent is more than one half the allowable effluent concentration required to meet water quality criteria/standards or the maximum sludge concentration is more than one half the applicable sludge criteria guidelines;

b. The maximum concentration of the pollutant in a grab sample from the POTW's influent is more than half the inhibition threshold; or the maximum concentration of the pollutant in a 24-hour composite sample from the POTW's influent is more than one fourth the inhibition threshold;

c. The maximum concentration of the pollutant in the POTW's influent is more than $1/500^{th}$ of the applicable sludge use criteria. (The use of a "1/500" reference level is suggested based on a review of POTW data [Fate of Priority Pollutants in Publicly Owned Treatment Works – EPA/440/1-82/303] indicating that a 500 fold concentration of pollutants can occur in digested sewage sludges as compared to the wastewater influent to the treatment plant); or

d. The concentration of the pollutant in the plant influent exceeds water quality criteria adjusted through a simple dilution analysis.

~~Therefore, the District believes it is not necessary to have a beryllium local limit.~~

This constituent does not meet the criteria for a local limit. However, since the Water Board requested no change to the local limit and because the District appears to be able to meet it, the District agrees to maintain its existing local limit for beryllium. In addition, the District reserves the right to request approval for a less restrictive local limit for beryllium, based on potential future compliance issues.

Section 2.3 – Anaerobic Digestion Inhibition

~~4.~~3. The Water Board's consultant indicated a concern about anaerobic digestion inhibition for 1,4-dichlorobenzene. In reviewing analytical data for 1,4-dichlorobenzene, the constituent was detected in all influent (0.003-0.012 mg/L) and primary treatment effluent (0.003-0.0032 mg/L) samples, but was not detected in the collection system (<0.010 mg/L), final effluent (<0.0005 mg/L), anaerobic sludge digester influent (<0.025 mg/kg), or anaerobic sludge digester effluent (<0.010 mg/L). Since 1,4-dichlorobenzene has an anaerobic digestion threshold inhibition level of 1.4 mg/L, which is two orders of magnitude above the detection limit of the samples collected of the anaerobic sludge digester influent, and all samples were non-detect and therefore *more than* two orders of magnitude lower than the threshold inhibition level, it is highly unlikely that this constituent will cause anaerobic digestion inhibition. However, the District will continue to monitor this constituent with the same frequency as other constituents in its pretreatment monitoring program.

~~5.~~4. The Water Board's consultant indicated a concern about anaerobic digestion inhibition for methylene chloride. According to the Local Limits Guidance, methylene chloride does not have an anaerobic digestion threshold inhibition level and is therefore not expected to inhibit anaerobic digestion. However, the District will continue to monitor this constituent with the same frequency as other constituents in its pretreatment monitoring program.

Section 2.4 – Water Quality Objectives

~~6.~~5. The District measured a concentration of 440 mg/L boron as the average influent concentration to the Soscol Water Recycling Facility during the local limits study. The typical domestic concentration measured in the sewer system during the local limits study was 570 mg/L, so it appears that the commercial and industrial wastewater is lower than the domestic wastewater and is effectively diluting it. As a result, the District believes it is appropriate to lower the existing boron local limit of 650 mg/L. The District also agrees that using the Central Valley water quality objective is inappropriate. However, as indicated in the verification report, use of the San Francisco Bay water quality objective for agricultural supply would result in a local limit of 80 mg/L, which is lower than the potable water delivered by the City of Napa of 140 mg/L (source: *City of Napa 2003 Drinking Water Quality Report to Consumers* (available on the City's website)). As a result, the District proposes the new local limit for boron to be equal to the average level detected in the City of Napa's drinking water, or 140 mg/L. As with other local limits, the District reserves the right to request approval for a less restrictive local limit for boron, based on potential future compliance issues.

~~7.~~6. The District agrees to maintain its existing lithium local limit of 135 lb/day MAIL (2.5 mg/L). One of the complications that occurred in developing these local limits is that the District

decided to consider the affects on reclaimed water after the local limits work plan was completed and local limits data had been collected.

Section 2.5 – Polycyclic Aromatic Hydrocarbons, Phenol, Salinity, Dissolved Sulfides

~~8.~~7. Polycyclic aromatic hydrocarbons (PAHs) were evaluated during the local limits development. PAHs were sampled in the collection system, influent, primary effluent, and final effluent at detection limits between 0.001 and 0.005 mg/L, and in anaerobic sludge digester influent and anaerobic sludge digester effluent (sludge disposal point) at detection limits of 0.99 mg/kg and 0.1 mg/L, respectively. Because all values were non-detect, it is not possible to compute percent removal (and no default value is provided), and therefore it is not possible to compute a local limit. This constituent also does not meet the criteria for a local limit, as with beryllium above. However, since the Water Board requested no change to the local limit and because the District appears to be able to meet it, the District agrees to maintain its existing local limit for PAHs. In addition, as with other local limits, the District reserves the right to request approval for a less restrictive local limit for PAHs, based on potential future compliance issues.

~~9.~~8. Phenol *was* evaluated during local limits development. However, the phenol local limit was calculated to be 2,400 lb/day MAIL (184 mg/L), a very high number, and therefore it was deemed unnecessary to have a local limit for phenol. See Attachment A for the computations. However, since the Water Board requested no change to the local limit and because the District appears to be able to meet it, the District agrees maintain its existing local limit for phenol. In addition, as with other local limits, the District reserves the right to request approval for a less restrictive local limit for phenol, based on potential future compliance issues.

~~10.~~9. Although salinity and dissolved sulfides have existing local limits, it was determined that there were no factors to drive local limits development for these constituents. We cannot ascertain any scientific or technical basis for having local limits. However, since the Water Board requested no change to the local limits and because the District appears to be able to meet them, the District agrees maintain its existing local limit for salinity and dissolved sulfides. In addition, as with other local limits, the District reserves the right to request approval for a less restrictive local limits for salinity and dissolved sulfides, based on potential future compliance issues.

Section 2.6 – Oil and Grease

~~11.~~10. The District agrees with the Water Board consultant's recommendation to monitor for oil & grease at the treatment plant influent to ensure that proposed local limits are sufficient in preventing NPDES permit violations.

Section 2.7 – Total Dissolved Solids

~~12.~~11. Based on the recommended total dissolved solids (TDS) concentration from the *Irrigation with Reclaimed Municipal Wastewater: A Guidance Manual Appendix C* (July 1984), the most sensitive crop that uses the District's recycled water is grapes. Based on Figure 3-1 from the Irrigation Guidance Manual, grapes are moderately sensitive crops, which have tolerances of electroconductivity between 1-2 decisiemens/meter (dS/m), or 640-1,280 mg/L TDS to produce 100% crop yields. The District used the mid-point of the range for moderately sensitive crops, and the Water Board's consultant used the most conservative value in the range. The District supports the revised proposed TDS local limit of 11,000 lb/day MAIL (836 mg/L).

Section 2.8 – Biochemical Oxygen Demand and Total Suspended Solids

~~13.~~12. The District believes that a ceiling for BOD and TSS is not necessary and prefers to base the regulation of the quantity of these constituents on connection fees. In this way, a natural limit on BOD and TSS is accomplished because a higher concentration results in the incentive for industries to provide pretreatment instead.

Miscellaneous Comments

~~14.~~13. Approved Local Limits – The Water Board consultant correctly pointed out that the Central Valley agricultural water quality objective for chloride (106 mg/L) was applied to the Soscol Water Recycling Facility. This approach was actually incorrect. The San Francisco Bay agricultural supply water quality objective (142 mg/L) should have been used. The correct chloride local limit should therefore be 2,973 lb/day MAIL, as shown in the calculations in Attachment A. This value is still far below the existing local limit of 7,898 lb/day MAIL.

~~15.~~14. Local limits should be expressed as a Maximum Allowable Industrial Loading (MAIL), in lb/day. This approach is consistent with the Local Limits Guidance. The District still needs to determine whether the uniform concentration allocation method will be used for every local limit constituent.

~~16.~~15. The District does not agree that anti-backsliding applies to local limits. Requirements for the establishment of limits for NPDES permits is described in 40 CFR §122.44 and the anti-backsliding language in contained in 40 CFR § 122.44(l). Anti-backsliding only applies to NPDES permits. Permits issued as part of the pretreatment program are not NPDES permits. This can be understood by reviewing the language in the Code of Federal Regulations. In particular, the language of 40 CFR 122.44 states:

> In addition to the conditions established under §122.43(a), each **NPDES permit** shall include conditions meeting the following requirements when applicable. (a)(1) Technology-based…

.
.
.
(l) Reissued permits... [contains anti-backsliding language]

(emphasis added)

In addition, the verification report does not cite any actual authority to support the position that EPA's anti-backsliding regulation applies to local limits. New policies like this are subject to approval of the Office of Administrative Law (OAL) and other procedures required by the Administrative Procedures Act. For these reasons, therefore, anti-backsliding does not apply to local limits.

Summary of Findings
POTW: Napa Sanitation District

POTW Treatment Description: Activated sludge, oxidation ponds, anaerobic digestion
POTW Design Flow: 9.3 Million Gallons per Day (MGD)
Average POTW Flow: 6.47 Average Nondomestic Flow: 1.58 MGD

Pollutant Name	Existing Limits	July 2003 Proposed Limits		Agreed Upon Local Limits		Comments
	(mg/L) unless otherwise stated	(mg/L) unless otherwise stated	Limiting Criteria	MAIL (lb/day)	mg/L	
1,4 Dichlorobenzene	-	-	-	-	-	Continue to monitor to obtain additional data
Aluminum	5	5	Maintain existing Limit	**65.9**	**5**	
Ammonia	58.57	36	Design Capacity	**474**	**36**	
Antimony	-	0.702	CCR Regulations	**9.25**	**0.702**	
Arsenic	0.16	0.048	503 Sludge Regulations	**0.33**	**0.025**	
Beryllium	0.1	-	-	**1.32**	**0.1**	Maintain existing limit
BOD	-	-	Regulate through sewer use fees	-	-	Regulate through sewer use fees
Boron	0.65	0.18	Water Quality Goals	**1.85**	**0.14**	
Cadmium	0.02	0.02	Maintain existing Limit	**0.21**	**0.016**	
Chloride	599	134	Water Quality Goals	**2973**	**225**	
Chromium (VI)	-	0.538	Water Quality Goals	**7.09**	**0.538**	
Chromium (total)	1.13	1.13	Maintain existing Limit	**14.9**	**1.13**	
Cobalt	0.05	0.05	Maintain existing Limit	**0.66**	**0.05**	
Copper	0.21	0.538	Anaerobic Digestion Inhibition	**5.12**	**0.388**	
Cyanide	0.27	0.03	Monthly NPDES Limit	**0.39**	**0.03**	
Fluoride	1	1	Maintain existing Limit	**13.2**	**1**	
Iron	5	5	Maintain existing Limit	**65.9**	**5**	
Lead	0.14	0.297	503 Sludge Regulations	**1.35**	**0.102**	
Lithium	2.5	-	-	**135**	**2.5**	Maintain existing limit
Manganese	-	1.15	Water Quality Goals	**15.2**	**1.15**	
Mercury	0.00606	0.00606	Maintain existing Limit	**0.075**	**0.0057**	

Summary of Findings
POTW: Napa Sanitation District

POTW Treatment Description: Activated sludge, oxidation ponds, anaerobic digestion
POTW Design Flow: 9.3 Million Gallons per Day (MGD)
Average POTW Flow: 6.47 Average Nondomestic Flow: 1.58 MGD

Pollutant Name	Existing Limits	July 2003 Proposed Limits		Agreed Upon Local Limits		Comments
	(mg/L) unless otherwise stated	(mg/L) unless otherwise stated	Limiting Criteria	MAIL (lb/day)	mg/L	
Methylene Chloride	-	-	-	-	-	Continue to monitor to obtain additional data
Molybdenum	0.1	0.048	Water Quality Goals	**0.633**	**0.048**	
Nickel	0.08	0.08	Maintain existing Limit	**1.05**	**0.08**	
Oil and Grease (polar)	75	75	Maintain existing Limit	**989**	**75**	Continue to monitor to obtain additional data
Oil and Grease (nonpolar)	50	50	Maintain existing Limit	**659**	**50**	Continue to monitor to obtain additional data
Oil and Grease (total)	-	-	-	-	-	Continue to monitor to obtain additional data
PAH (polycyclic aromatic hydrocarbons)	0.72	-	-	**9.49**	**0.72**	Maintain existing limit
Phenol	0.09	-	-	**1.19**	**0.09**	Maintain existing limit
Salinity	1.5 dS/m	-	-	-	**1.5 dS/cm**	Maintain existing limit
Selenium	0.51	0.096	503 Sludge Regulations	**1.27**	**0.096**	
Silver	0.33	0.224	Anaerobic Digestion Inhibition	**2.95**	**0.224**	
Sodium	90	86		**1187**	**90**	
Sulfide, dissolved	0.1	-	-	**1.32**	**0.1**	Maintain existing limit
Thallium	-	0.999	CCR Regulations	**13.2**	**0.999**	
TDS	1000	1000	Maintain existing Limit	**11,000**	**836**	
TSS	-	-	Regulate through sewer use fees	-	-	Regulate through sewer use fees
Vanadium	0.1	0.1	Maintain existing Limit	**1.32**	**0.1**	
Zinc	2.99	1.738	Activated Sludge Inhibition	**10**	**0.762**	

Attachment A

	A	B	C	D	E
1	**Phenol Computations using Local Limits Guidance for Activated Sludge Inhibition**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average Influent Flow	mgd	6.47	2002 Average Dry Weather Flow
5		Average Non-Domestic Flow	mgd	1.58	2002 Ave Dry Weather Non-Domestic Flow
6		Average Influent Concentration	µg/L	*3*	Local Limits Monitoring
7		Average Primary Effluent Concentration	µg/L	11	Local Limits Monitoring
8		Average Effluent Concentration	µg/L	1	Local Limits Monitoring
9		Max Effluent Concentration	µg/L	*0.5*	Local Limits Monitoring
10		Typical Domestic Concentration	µg/L	7	Local Limits Monitoring
11		Worst-Case Domestic Concentration	µg/L	10	Local Limits Monitoring
12	**Removal Efficiency**				
13		In-Plant Removal, Typical	%	80.0%	(D6-D8)/D6
14		In-Plant Removal, Worst	%	80.0%	Local Limits Monitoring
15		In-Plant Primary Removal	%	0.0%	Zero Removal
16	**Existing Conditions (Sludge)**				
17		Total Sludge Flow to Digester	mgd	0.030	2002 Average WAS Flow to Digester
18		Activated Sludge Concentration, Measured	mg/kg	*0.495*	Local Limits Monitoring
19		Influent Sludge Density	kg/L	0.92	Local Limits Monitoring
20		Activated Sludge Concentration, Calculated	µg/L	*455*	1000*D18*D19
21		Activated Sludge Solids	%	2.1%	Local Limits Monitoring
22		Consolidated Sludge Solids	%	50%	Minimum Landfill Disposal Criteria
23		Dry Sludge Concentration, Measured	µg/L	*250*	Local Limits Monitoring
24		Effluent Sludge Density	kg/L	1.02	Local Limits Monitoring
25		Dry Sludge Concentration, Calculated	mg/kg	*12*	D23*0.001/(D21*D24)
26	**Discharge/Disposal Limits**				
27		Discharge Limit (Daily)	µg/L	-	-
28		Discharge Limit (Monthly)	µg/L	-	-
29		Agricultural Effluent Limit	µg/L	-	-
30		Activated Sludge Inhibition Limit	µg/L	50,000	Local Limits Guidance
31		Anaerobic Digestion Inhibition Limit	µg/L	-	-
32		Sludge 503 Limit, Dry	mg/kg	-	-
33		Sludge CCR Limit ,Wet	mg/kg	-	-
34	**Headworks Loading Limits**				
35		Daily Discharge Loading Limit	lbs/day	-	-
36		Monthly Discharge Loading Limit	lbs/day	-	-
37		Agricultural Discharge Loading Limit	lbs/day	-	-
38		Activated Sludge Inhibition Loading Limit	lbs/day	2,700	0.008345*D30*D4/(1-D15)
39		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-	-
40		Sludge 503 Loading Limit, Dry	lbs/day	-	-
41		Sludge CCR Loading Limit, Wet	lbs/day	-	-
42	**Maximum Allowable Headworks Loading (MAHL)**				
43		**Limiting MAHL**	lbs/day	**2,700**	MIN(D35:D41)
44		Driving Factor		Activated Sludge Inhibition Loading Limit	
45	**Existing Loadings**				
46		Total Headworks Load	lbs/day	0.13	D4*D6*0.008345
47		Domestic Load, Typical	lbs/day	0.29	(D4-D5)*D10*0.008345
48		Domestic Load, Worst	lbs/day	0.41	(D4-D5)*D11*0.008345
49		Safety Factor	10%	270	D43*10%
50	**Maximum Allowable Industrial Loading (MAIL)**				
51		**Industrial Allocation**	lbs/day	**2,429**	D43-D48-D49
52		Equivalent Across-the-Board Limit	µg/L	184,241	D51/D5/0.008345

Response to March 30, 2005 Comments by San Francisco Bay Regional Water Quality Control Board Regarding Soscol Water Recycling Facility Local Limits Verification Report

Attachment A

	A	B	C	D	E
1	**Chloride Computations using Agricultural Use Water Quality Goals**				
2			Units	Calculations	Formula/Source
3	**Existing Conditions (Wastewater)**				
4		Average Influent Flow	mgd	6.47	2002 Average Dry Weather Flow
5		Average Non-Domestic Flow	mgd	1.58	2002 Ave Dry Weather Non-Domestic Flow
6		Average Influent Concentration	mg/L	110	Local Limits Monitoring
7		Average Primary Effluent Concentration	mg/L	107	Local Limits Monitoring
8		Average Effluent Concentration	mg/L	160	Local Limits Monitoring
9		Max Effluent Concentration	mg/L	200	Local Limits Monitoring
10		Typical Domestic Concentration	mg/L	43	Local Limits Monitoring
11		Worst-Case Domestic Concentration	mg/L	51	Local Limits Monitoring
12	**Removal Efficiency**				
13		In-Plant Removal, Typical	%	-45%	(D6-D8)/D6
14		In-Plant Removal, Worst	%	-	-
15		In-Plant Primary Removal	%	2%	(D6-D7)/D6
16	**Existing Conditions (Sludge)**				
17		Total Sludge Flow to Digester	mgd	0.030	2002 Average WAS Flow to Digester
18		Activated Sludge Concentration, Measured	mg/kg	-	-
19		Influent Sludge Density	kg/L	0.92	Local Limits Monitoring
20		Activated Sludge Concentration, Calculated	mg/L	-	-
21		Activated Sludge Solids	%	2.1%	Local Limits Monitoring
22		Consolidated Sludge Solids	%	50%	Minimum Landfill Disposal Criteria
23		Dry Sludge Concentration, Measured	mg/L	-	-
24		Effluent Sludge Density	kg/L	1.02	Local Limits Monitoring
25		Dry Sludge Concentration, Calculated	mg/kg	-	-
26	**Discharge/Disposal Limits**				
27		Discharge Limit (Daily)	mg/L	-	-
28		Discharge Limit (Monthly)	mg/L	-	-
29		Agricultural Effluent Limit	mg/L	142	Water Quality Goals
30		Activated Sludge Inhibition Limit	mg/L	-	-
31		Anaerobic Digestion Inhibition Limit	mg/L	-	-
32		Sludge 503 Limit, Dry	mg/kg	-	-
33		Sludge CCR Limit ,Wet	mg/kg	-	-
34	**Headworks Loading Limits**				
35		Daily Discharge Loading Limit	lbs/day	-	-
36		Monthly Discharge Loading Limit	lbs/day	-	-
37		Agricultural Discharge Loading Limit	lbs/day	5,271	0.008345*D29*D4/(1-D13)
38		Activated Sludge Inhibition Loading Limit	lbs/day	-	-
39		Anaerobic Digestion Inhibition Loading Limit	lbs/day	-	-
40		Sludge 503 Loading Limit, Dry	lbs/day	-	-
41		Sludge CCR Loading Limit, Wet	lbs/day	-	-
42	**Maximum Allowable Headworks Loading (MAHL)**				
43		**Limiting MAHL**	lbs/day	**5,271**	MIN(D35:D41)
44		Driving Factor		Agricultural Discharge Loading Limit	
45	**Existing Loadings**				
46		Total Headworks Load	lbs/day	5,939	D4*D6*8.345
47		Domestic Load, Typical	lbs/day	1,771	(D4-D5)*D10*8.345
48		Domestic Load, Worst	lbs/day	2,081	(D4-D5)*D11*8.345
49		Safety Factor	10%	527	D43*10%
50	**Maximum Allowable Industrial Loading (MAIL)**				
51		**Industrial Allocation**	lbs/day	**2,973**	D43-D47-D49
52		Equivalent Across-the-Board Limit	mg/L	225	D51/D5/8.345

ATTACHMENT E

Fact Sheet

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1515 CLAY STREET, SUITE 1400
OAKLAND, CA 94612
(510) 622 - 2300 Fax: (510) 622 - 2460

FACT SHEET
for

NPDES PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR

NAPA SANIATION DISTRICT
NAPA, NAPA COUNTY

NPDES PERMIT NO. CA0037575
ORDER NO. R2-2005-0008

PUBLIC NOTICE:

Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments must be submitted to the Regional Water Board no later than 5:00 p.m. on April 4, 2005.
- Send comments to the Attention of Tong Yin.

Public Hearing

- The draft permit will be considered for adoption by the Regional Water Board at a public hearing during the Regional Water Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: April 20, 2005, starting at 9:00 am.

Additional Information

- For additional information about this matter, interested persons should contact Regional Water Board staff member: Ms. Tong Yin, Phone: (510) 622-2418; email: tyin@waterboards.ca.gov

This Fact Sheet contains information regarding a reissuance of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the Napa Sanitation District, Napa County, for discharging secondary-level treated municipal wastewater into the Napa River. The Fact Sheet describes the factual, legal, and methodological basis for the sections addressed in the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the effluent limitations.

I. INTRODUCTION

The Discharger applied for reissuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the NPDES program. The application and Report of Waste Discharge are dated August 31, 2004.

1. Facility Description

The Discharger owns and operates a secondary municipal wastewater treatment plant (the plant) located at the Soscol Water Recycling Facility south of the City of Napa, Napa County. The plant has a dry weather design capacity of 15.4 million gallons per day (mgd). It serves a current population of 75,000 and provides secondary level treatment primarily for domestic and commercial wastewater collected from the City of Napa and adjacent unincorporated areas.

The U.S. Environmental Protection Agency (U.S. EPA) and the Regional Water Board have classified this Discharger as a major discharger.

2. Treatment Process Description

During the wet season (from November 1 through April 30), raw wastewater is treated using screens, aerated grit chambers, and primary clarifiers. After primary clarification the flow is treated in the activated sludge system and/or the oxidation pond system. Up to 8 mgd of wastewater can be treated by the activated sludge system (operational in September 2001) followed by secondary clarification. The oxidation pond system consists of four oxidation ponds followed by polymer coagulation and clarification. The four oxidation ponds also act as flow equalization ponds for peak wet weather flows. After secondary treatment, the oxidation pond system effluent is blended with the activated sludge effluent before undergoing chlorination and dechlorination, prior to discharge to the Napa River.

During the dry season period, wastewater is treated the same way as in the wet season. After the secondary treatment, the oxidation pond effluent is blended with the activated sludge basin effluent, followed by coagulation, filtration, and chlorination before reclamation. The flow not used for reclamation remains in the oxidation ponds and does not undergo polymer coagulation and clarification until the wet season begins when the discharge of effluent to the Napa River is allowed.

3. Reclamation Activities and Emergency Dry Weather Discharges

During dry weather season, the effluent goes through secondary treatment and then filtration prior to reclamation. The current reclamation users include Somky Ranch, Jameson Canyon Reclamation site, the Napa Airport, and Chardonnay Golf Course and Vineyards, Dey Laboratories, Eagle Vines Golf Course and Vineyards, Grgich Cellars Vineyards, Laird Vineyards, Fagundes Ranch, Giles Vineyards, Carpenter Vineyards, Napa Municipal Golf Course, Panattoni Property (formerly Kohnan Sake Factory and Vineyards), Napa Valley College landscaping and vineyards, Napa Corporate Park, Inspiration Chapel, Enterprise Corporate Park, and Venture Commerce. These sites may be discontinued or new sites may be added during or after the term of this permit. From September 2002 through September 2004, the Discharger reclaimed an average of 3.4 mgd of effluent, which is approximately 48% of its annual average dry season flow.

Records show that the plant had nine emergency discharges over the past eight years since 1995, which happened in the years of 1995, 1996, 1997, 1999, 2000, 2001, 2002, and 2003. The Discharger is required to submit necessary information, such as a water balance and Pond Storage Objective, a projection and description of the emergency discharge, any necessary follow-up maintenance and repair schedule and plan, etc., with any request for emergency discharge, for the Regional Water Board to evaluate such a request (See Regional Water Board staff Letter to the Discharger dated October 26, 2004).

4. Receiving Water Beneficial Uses

The receiving waters for the subject discharge are the waters of the Napa River. The beneficial uses for the River, in the vicinity of the discharge, as identified in the Regional Water Board's June 21, 1995 Water Quality Control Plan San Francisco Bay Basin (Region 2) (the Basin Plan) and based on known uses of the receiving waters near the discharge, are:

a. Agricultural Water Supply
b. Navigation
c. Contact and Non-Contact Water Recreation
d. Warm and Cold Fresh Water Habitat
e. Wildlife Habitat
f. Preservation of Rare and Endangered Species
g. Fish Migration and Spawning

5. Receiving Water Salinity

The receiving waters for the subject discharge are the waters of the Napa River, which is a tributary of San Pablo Bay. The Discharger has collected receiving water salinity data at several monitoring stations both upstream and downstream of the discharge during November 2001 through December 2004. There are a total of 181 salinity measurements available. Of these, 59 values are below 1 part per thousand (ppt) (32.6%), and 53 values are above 10 ppt (29.3%). Therefore, the receiving water is classified as estuarine by both Basin Plan and CTR definition. This is consistent with the fact that Napa River where the Discharger's outfall is located is tidally influenced. Therefore, the effluent limitations specified in this Order are based on the lower of the marine and freshwater WQOs and WQC of the Basin Plan, CTR, and NTR.

6. Receiving Water Hardness

Some WQOs and WQC are hardness dependent. The Discharger has collected receiving water hardness data at several monitoring stations both upstream and downstream of the discharge during November 2001 through December 2004. There are a total of 306 hardness measurements available. Of these, only 181 hardness values are paired with salinity measurements on the same sampling dates. When calculating a representative ambient hardness value, the hardness data set was censored (from 181 values to 55 values) to eliminate hardness values above 400 mg/L and to eliminate hardness values obtained when the receiving water salinity was above 1.0 ppt. From the censored data set, the adjusted geometric mean (AGM), which is the value that 30% of the measurements fall below, was calculated to be 147 mg/L. The data and calculation can be found in **Attachment 1** of this Fact Sheet. The following lists the procedure to calculate an AGM:

1. Calculate the logarithms of each hardness value.
2. Calculate the arithmetic mean of the logarithms.
3. Calculate the standard deviation (s) of the logarithms.
4. Calculate the standard error (SE) of the arithmetic mean:
   $SE = s/\sqrt{n}$
5. Calculate A = arithmetic mean - $t_{0.7} \times SE$
   where $t_{0.7}$ is the value of Student's *t* statistics for a one-sided probability of 0.7 with *n-1* degrees of freedom, *n*-sample size. With a sample size of 55, $t_{0.7} = 0.5275$.
6. Take the antilogarithm of A, antilog A is the AGM.

II. DESCRIPTION OF EFFLUENT

Table A below presents the quality of the discharge, which are based on the data from the self-monitoring reports over the period of September 2001 through March 2004 for conventional pollutants, and from September 2001 through April 2004 for most priority pollutants, when there were discharges to the Napa River. Effluent data for inorganic priority pollutants used for this permit reissuance can be found in **Attachment 2** of this Fact Sheet.

Table A. Summary of Discharge Data [1][2]

Parameter	Average[1]	Range of Reported Values	Number of Samples
pH, standard units	--	6.6-9.2	557
Total Coliform Bacteria, MPN/100 mL	--	<2-2400	250
BOD_5, mg/L	6.5	<5-18	199
Chlorine, mg/L	--	0- <0.1	452
TSS, mg/L	10.0	2-48.4	272
Settleable Solids, ml/L	--	<0.01-0.1	17
Dissolved Oxygen, mg/L	9.6	5.1-12.7	558
Oil and Grease, mg/L	All ND	<5-<6	11
Temperature (°C)	16.8	11.4-24.3	558
Turbidity (NTU)	4.6	1.61-10.4	38
Ammonia as Nitrogen, mg/L	4.8	<0.1-20	87
Antimony, µg/L	0.23	0.03-0.4	10
Arsenic, µg/L	0.74	0.2-2.0	25
Beryllium, µg/L	All ND	Min DL 0.06	12
Cadmium, µg/L	All ND	Min DL 0.03	25
Chromium III, µg/L	0.43	0.2-0.7	25
Chromium VI, µg/L	9.3	5-10	14
Copper, µg/L	3.9	1-13	29
Lead, µg/L	0.13	0.05-0.4	25
Mercury, µg/L	0.008	0.0008-0.15	38
Nickel, µg/L	3.7	3-4.9	26
Selenium, µg/L	0.7	<0.5-5	23
Silver, µg/L	0.08	<0.02-0.3	25
Thallium, µg/L	0.04	<0.03-0.08	12
Zinc, µg/L	13.8	6-30	25
Cyanide, µg/L	3.4	<0.3-20	36
2,3,7,8-TCDD, pg/L	0.00015[3]	0.000684-0.002	8
Tributyltin	0.0048	<0.004-0.0226	8

[1] Statistics are based on the effluent data collected during September 2001 (after the new activated sludge system became operational) through March 2004 for conventional pollutants and from September 2001 through April 2004 for priority pollutants when there were discharges to the Napa River.

[2] Averages for conventional pollutants were calculated with the non-detected values being replaced with the detection limits; averages for priority pollutants were calculated with the non-detected values being replaced with half detection limits (method detection limits if available, or reporting limits). DL- detection limit.

[3] There are only three detected TCDD TEQ concentrations, all other TCDD TEQ concentrations are determined to be zero due to all non-detect values of the 17 TCDD congeners.

III. Permit Litigation

The previous permit, Order Nos. 00-059 and R2-2002-0111, will expire on July 31, 2005. Due to the litigations around both orders, the Discharger entered into an agreement with the Regional Water Board on August 10, 2004 to reissue the permit early. Table B lists the major petitions and appeals chronologically.

Table B. List of Petitions and Appeals

Date	Regional Water Board and State Water Board Action, Discharger Petitions to State Water Board	Date	Discharger Appeals to Courts
July 19, 2000	Order No. 00-059 (the Permit) was adopted by the Regional Water Board.	July 2001	The Discharger filed a petition for administrative mandamus in Superior Court, challenging the merits of the Permit.
August 18, 2000	The Discharger and BACWA (the Bay Area Clean Water Agency) petitioned the Permit to the State Water Resources Control Board (State Water Board) to stay contested effluent limits. State Water Board denied the request.	September 6, 2001	Solano County Superior Court granted a partial stay. The stayed limits include 85% removal of BOD_5 and TSS, effluent limitations in B(i)(7) and B(ii)(7) for priority pollutants, and mercury and dioxins/furans mass limits in B(iii).
December 5, 2001	State Water Board issued Order No. WQ 2001-016, directing the Regional Water Board to consider specific modifications to the Permit. By the same action, the State Water Board stayed the remanded portions of the Permit, including permit findings, effluent limitations, and provisions, until the Regional Water Board acts to reconsider and modify, as appropriate.	In response to the issuance of WQ 2001-016	The Discharger and BACWA challenged parts of the State Water Board Order by amending their writ petition in the Superior Court.
October 18, 2002	Regional Water Board adopted Order No. R2-2002-0111 to amend the Permit per the State Water Board Order WQ 2001-016.	June 24, 2003	The Superior Court denied the writ petition in its entirety. The Discharger and BACWA filed a notice of appeal, challenging this decision.
November 15, 2002	The Discharger and BACWA petitioned the State Water Board for review of the Permit Amendment. This petition was held in abeyance at the State Water Board until December 23, 2004.	September 11, 2003	The Court of Appeal has issued an order staying portions of the Permit.
October 15, 2003	The Regional Water Board adopted Order No. R2-2003-0092, which assessed $147,000 in mandatory minimum penalties (MMPs) for exceedances of chlorine residual and coliform effluent limitations.	January 29, 2004	The Discharger filed a petition for administrative mandamus in Napa County Superior Court.
November 14, 2003	The Discharger petitioned the State Water Board for review of this MMP Order.		
August 10, 2004	The Regional Water Board and the Discharger entered into an agreement to resolve the pending permitting and enforcement issues and to avoid the expense and uncertainty of litigation, which includes Regional Water Board reissuing the NPDES permit on early schedule.		

IV. GENERAL RATIONALE AND REGULATORY BASES

- the Federal *Water Pollution Control Act*, Sections 301 through 305, and 307, and amendments thereto, as applicable (the Clean Water Act – the CWA);

- the Regional Water Board's June 21, 1995 *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan), and amendments thereto, as subsequently approved by the State Water Resources Control Board (the State Water Board), the Office of Administrative Law (OAL) and the U.S. EPA;

- the State Water Resource Control Board's (the State Water Board's) March 2, 2000 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan - the SIP), as subsequently approved by the OAL and the U.S. EPA;

- the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR);

- the U.S. EPA's National Toxics Rule as promulgated [Federal Register Volume 57, 22 December 1992, page 60848] and subsequently amended (the NTR);

- the U.S. EPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986], and subsequent amendments, (the U.S. EPA Gold Book);

- applicable Federal Regulations [40 CFR Parts 122 and 131];

- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];

- the U.S. EPA's December 10, 1998 *National Recommended Water Quality Criteria* compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];

- the U.S. EPA's December 27, 2002 *Revision of National Recommended Water Quality Criteria* compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095]; and

- guidance provided with State Water Board actions remanding permits to the Regional Water Board for further consideration.

V. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

1. Recent Facility Performance

Section 402(o) of the Clean Water Act (CWA) and 40 CFR § 122.44(l) require that water quality-based effluent limitations (**WQBELs**) in re-issued permits be at least as stringent as in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current facility performance or on previous permit limitations whichever is more stringent (unless anti-

backsliding requirements are met). In determining what constitutes "recent plant performance," best professional judgment (**BPJ**) was used. Effluent data collected from September 2001 through March/April 2004 for conventional and toxic pollutants are considered representative of recent plant performance.

2. Impaired Water Bodies on 303(d) List

On June 6, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 2002 303(d) list), prepared pursuant to provisions of Section 303(d) of the federal CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The Napa River is a tributary to San Pablo Bay and both are listed as impaired water bodies on the 2002 303(d) List. The 2002 303(d) list includes San Pablo Bay as impaired by: chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. Discharges of conservative pollutants (pollutants that do not break down readily) to Napa River could reach San Pablo Bay through sediment transport or in the water column and may contribute to impairment of San Pablo Bay. The 2002 303(d) list includes the Napa River as impaired by sediment, pathogens, and nutrients. The Board plans to adopt Napa River TMDLs within the permit term.

The SIP requires final effluent limitations for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDLs) and associated waste load allocations (WLAs). The SIP and U.S. EPA regulations also require that final concentration-based WQBELs be included for all pollutants having reasonable potential to cause or contribute to an exceedence of applicable water quality standards (having reasonable potential or RP). The SIP requires that where the discharger has demonstrated infeasibility to meet the final WQBELs, interim performance-based limitations (IPBLs) or previous permit limitations (whichever is more stringent) be established in the permit, together with a compliance schedule that shall remain in effect until final effluent limitations are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control where interim limitations are established.

3. Basis for Prohibitions

a. Discharge Prohibition A.1. (no discharge receiving less than 10:1 dilution or to dead-end sloughs): This prohibition is based on the Basin Plan and is the previous permit. The Basin Plan prohibits discharges not receiving a minimum10:1 initial dilution or to dead-end sloughs (Chapter 4, Discharge Prohibition No. 1). This Order requires the Discharger to perform a mixing zone study to confirm that a 10:1 dilution credit is achievable or to justify an appropriate dilution credit.

b. Discharge Prohibition A.2 & A.4 (no bypass or overflow of untreated wastewaters, no discharge of anything other than storm water to storm drains, unless as authorized by this permit): This prohibition is based on the Basin Plan. The Basin Plan prohibits the discharge of partially treated and untreated wastes (Chapter 4, Discharge Prohibition No.15). This prohibition is based on general concepts contained in Sections 13260 through 13264 of the California Water Code that relate to the discharge of waste to State waters without filing for and being issued a permit. Under certain circumstances, as stated in 40 CFR 122.41 (m), the facilities may bypass waste streams to waters of the State in order to prevent loss of life, personal injury, or severe property damage, or if there were no feasible alternatives to the bypass and the Discharger submitted notices of the anticipated bypass to waters of the State.

c. Discharge Prohibition A.3. (average dry weather flow not to exceed 15.4 mgd): This prohibition is based on the historic reliable treatment capacity of the plant. Exceedance of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of achieving compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).

e. Discharge Prohibition A.5. (no discharge to Napa River from May 1 through October 31): Discharge to during the dry weather season is prohibited by the Basin Plan, Chapter 4, Discharge Prohibition No. 1. However, an exception may be authorized by the Executive Officer under certain emergency situations such as prolonged wet season that prohibits normal reclamation.

4. Basis for Effluent Limitations

a. Effluent Limitations B(i)(1) and B(ii)(1) (Conventional Pollutants)

1) Conventional pollutants effluent limits applicable to wet season discharges:

Permit Limitation	Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B(i)(1)(a)	Biochemical Oxygen Demand (BOD_5, 20°C)	mg/L	30	45	--	--
	or Carbonaceous Oxygen Demand (COD)	mg/L	25	40	--	--
B(i)(1)(b)	Total Suspended Solids	mg/L	30	45	--	--
B(i)(1)(c)	Oil & Grease	mg/L	10	--	20	--
B(i)(1)(d)	Chlorine Residual[1]	mg/L	--	--	--	0.0

[1] Requirement defined as below the limit of detection in the latest officially approved edition of "Standard Methods for Examination of Water and Wastewater."

The effluent limitations B(i)(1)(a) through B(i)(1)(c) are technology-based limits. These limits are based on the Basin Plan (Chapter 4, page 4-8, and Table 4-2, at page 4-69). These limits are unchanged from the previous permit limits. Compliance with these effluent limits has been demonstrated by existing plant performance.

Effluent limitation B(i)(1)(d): This effluent limitation was in the previous permit, and is from Chapter 4 of the Basin Plan. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flow, chlorine, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positives of chlorine residual exceedances are not violations of the permit limit. There was one violation of the chlorine residual effluent limitation in December 2000.

2) Conventional pollutants effluent limits applicable to dry season discharges:

Permit Limitation	Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B(ii)(1)(a)	A. Biochemical Oxygen Demand (BOD_5, 20°C)	mg/L	10	20	--	--
B(ii)(1)(b)	B. Total Suspended Solids	mg/L	20	30	--	--
B(ii)(1)(c)	C. Oil & Grease	mg/L	10	--	20	--
B(ii)(1)(d)	D. Residual Chlorine [1]	mg/L	--	--	--	0.0

Effluent limitations B(ii)(1)(a) through B(ii)(1)(c) are unchanged from the previous permit limits and are based on BPJ for discharging into a shallow water body. Effluent limit B(ii)(1)(d) is technology-based limit, it is a previous permit limitation and is based on the Basin Plan (Chapter 4, page 4-8, and Table 4-2, at page 4-69). Compliance with these effluent limits has been demonstrated by existing plant performance except one violation of the chlorine residual effluent limitation in September 2001.

b. Effluent Limitation B(i)(2) and B(ii)(2) (pH, minimum 6.0, maximum 9.0 for wet season discharges; minimum 6.5, maximum 8.5 for dry season discharges):

These effluent limits are technology-based limit and are unchanged from the previous permit. These limits are based on the Basin Plan (Chapter 4, Table 4-2), which are derived from federal requirements (40 CFR 133.102). These are previous permit effluent limitations and compliance has been demonstrated by existing plant performance. The Discharger may elect to use continuous on-line monitoring system(s) for measuring pH. In this case, 40 CFR 401.17 (pH Effluent Limitations under Continuous Monitoring), and BPJ are the basis for the compliance provisions for pH limitations. Excursions of the pH effluent limitations are permitted, provided that both of the following conditions are satisfied: (i) The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) No individual excursion from the range of pH values shall exceed 60 minutes. For dry season discharges, since it is unlikely that the discharge lasts longer than a month, the condition for complying with pH limit under continuous monitoring is limited to (ii) above.

c. Effluent Limitation B(i)(3) and B(ii)(3) (Whole Effluent Chronic Toxicity):

The chronic toxicity limit is based on the Basin Plan and are unchanged from the previous permit limit. Chronic toxicity shall be monitored by using critical life stage test(s) and the most sensitive test species identified by screening phase testing. The Discharge has not performed any chronic toxicity monitoring to date. The Discharge is conducting a screening phase study to identify the most sensitive species. The Discharger shall conduct routine monitoring with the species approved by the Executive Officer.

d. Effluent Limitation B(iii)(1) (Enterococcus Limitations):

The previous Order included total coliform limitations. The U.S. EPA's May, 2002 draft implementation guidance for bacteriological water quality criteria recommended either

enterococcus or *E. coli*, or both together, as superior to total or fecal coliform as bacteriological indicators for human health pathogenic risk. This recommendation was based on the fact that there are multiple sources of coliform bacteria, including humans, and research results showing that many of these forms are unrelated to human pathogens or risk potential. A growing number of studies (including the Santa Monica Bay study [R. Haile, et al. *The health effects of swimming in ocean water contaminated by storm drain runoff.* Epidemiology 10(4): 355-363 (1999).]) have indicated that enterococcus and/or *E. coli* counts correlate more significantly than coliform counts with human health problems than coliform counts, and serve as a more accurate indicator of human health risk potential from water contact. The Discharger submitted a *Revised Bacteria Effluent Limits Special Study* (Study), June 2003, to demonstrate that the use of enterococcus as a bacterial indicator will not adversely impact the water quality or beneficial uses of the Napa River. Further, as the Napa River is estuarine at the discharge point, the lower, more conservative, enterococci water quality objectives for fresh water were correctly chosen. Therefore, this Permit contains alternate enterococcus bacteriological limits, which are based on the Basin Plan, Chapter 3, Page 3-8, Table 3-2, enterococci limitations for freshwater, steady state and moderately used area.

e. Effluent Limitation B(iii)(2) (BOD and TSS monthly average 85 percent removal):

These are technology-based limits and previous permit effluent limitations based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102; definition in 133.101). Compliance has been demonstrated by existing plant performance. Since 2000, the Discharger has only once reported BOD removal below 85% and TSS removal has always been greater than 85%.

f. Effluent Limitation B(iii)(3) (Whole Effluent Acute Toxicity):

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The acute toxicity limit is based on the Basin Plan. There are ten acute toxicity effluent limit exceedances between 2000 and 2002, which the Discharger has claimed those being related to elevated ammonia concentrations in the effluent. This Order specifies how to address ammonia-related toxicity.

g. Effluent Limitation B(i)(4) and B(ii)(4) (Toxic Substances):

1) Reasonable Potential Analysis (RPA)

Code of Federal Regulations Title 40, Part 122.44(d)(1)(i) (40 CFR 122.44(d)(1)(i)) specifies that permits must include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard" (have Reasonable Potential or RP). Thus, assessing whether a pollutant has RP is the fundamental step in determining whether or not a WQBEL is required. The following sections describe the RPA and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.

i) *WQOs and WQC*: The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan, and applicable WQC in the CTR/NTR, or site-specific objectives (SSOs) if available, after adjusting for site-specific hardness and translators, if applicable. The governing WQOs/WQC are shown in **Attachment 3** of this Fact Sheet.

ii) *Methodology*: The RPA uses the methods and procedures prescribed in Section 1.3 of the SIP. Regional Water Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge shows reasonable potential with respect to the governing WQOs or WQC. **Attachment 3** of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.

iii) *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from September 2001 through April 2004 for most priority pollutants. Ambient data collected in 2002, from the station Napa River near Napa, and additional copper and nickel receiving water data collected during 2001 through 2004 by the Discharger, were used in evaluating background water quality for this Order.

iv) *RPA determination*: The RPA results are shown below in Table C and **Attachment 3** of this Fact Sheet. The pollutants that exhibit reasonable potential are copper, mercury, nickel, selenium, cyanide, TCDD TEQ, and tributyltin.

Table C. Summary of Reasonable Potential Results

CTR No.	Priority Pollutants	Applicable WQO/WQC	MEC or Minimum DL[1] (µg/L)	Maximum Background or Minimum DL[1] (µg/L)	RP Determination
1	Antimony	4300	**0.4**	**1.7**	No
2	Arsenic	36	**2**	**34**	No
3	Beryllium	No Criteria	0.06	0.06	Uo
4	Cadmium	1.5	**0.1**	**0.04**	No
5a	Chromium (III)	284	**NA**	**2.6**	Ud
5b	Chromium (VI)	11.4	**0.7**	**0.4**	No
6	Copper	7.4	**13**	**18.5**	**Yes**
7	Lead	5.2	**0.3**	**0.78**	No
8	Mercury	0.025	**0.15**	**0.011**	**Yes**
9	Nickel	8.3	**4.9**	**68.7**	**Yes**
10	Selenium	5	**5**	**19**	**Yes**
11	Silver	2.2	**0.3**	0.02	No
12	Thallium	6.3	**0.08**	**0.3**	No
13	Zinc	85.6	**30**	**10**	No
14	Cyanide	1	**20**	**0.363**	**Yes**
15	Asbestos	No Criteria	NA	0.2	Uo, Ud
	TCDD TEQ	1.4×10^{-8}	$\mathbf{2\times10^{-9}}$	$\mathbf{3.68\times10^{-8}}$	**Yes**
17	Acrolein	780	1	1	No
18	Acrylonitrile	0.66	1	1	No
19	Benzene	71	0.3	0.27	No
20	Bromoform	360	**0.9**	0.1	No

CTR No.	Priority Pollutants	Applicable WQO/WQC	MEC or Minimum DL[1] (µg/L)	Maximum Background or Minimum DL[1] (µg/L)	RP Determination
21	Carbon Tetrachloride	4.4	**1**	0.42	No
22	Chlorobenzene	21000	0.3	0.19	No
23	Chlorodibromomethane	34	**11**	0.18	No
24	Chloroethane	No Criteria	0.34	0.34	Uo
25	2-Chloroethylvinyl ether	No Criteria	0.32	0.31	Uo
26	Chloroform	No Criteria	**48**	**1.5**	Uo
27	Dichlorobromomethane	46	**23**	**0.6**	No
28	1,1-Dichloroethane	No Criteria	0.49	0.28	Uo
29	1,2-Dichloroethane	99	0.2	0.18	No
30	1,1-Dichloroethylene	3.2	0.49	0.37	No
31	1,2-Dichloropropane	39	0.2	0.2	No
32	1,3-Dichloropropylene	1700	0.5	0.2	No
33	Ethylbenzene	29000	0.4	0.3	No
34	Methyl Bromide	4000	**0.7**	0.42	No
35	Methyl Chloride	No Criteria	**1.5**	0.36	Uo
36	Methylene Chloride	1600	0.4	0.38	No
37	1,1,2,2-Tetrachloroethane	11	0.3	0.3	No
38	Tetrachloroethylene	8.85	**0.5**	0.32	No
39	Toluene	200000	**4.9**	0.25	No
40	1,2-Trans-Dichloroethylene	140000	0.43	0.3	No
41	1,1,1-Trichloroethane	No Criteria	0.49	0.35	Uo
42	1,1,2-Trichloroethane	42	0.3	0.27	No
43	Trichloroethylene	81	0.3	0.29	No
44	Vinyl Chloride	525	0.47	0.34	No
45	2-Chlorophenol	400	0.6	0.4	No
46	2,4-Dichlorophenol	790	0.7	0.3	No
47	2,4-Dimethylphenol	2300	0.9	0.3	No
48	2-Methyl- 4,6-Dinitrophenol	765	0.9	0.4	No
49	2,4-Dinitrophenol	14000	0.6	0.3	No
50	2-Nitrophenol	No Criteria	0.7	0.3	Uo
51	4-Nitrophenol	No Criteria	0.6	0.2	Uo
52	3-Methyl 4-Chlorophenol	No Criteria	0.5	0.3	Uo
53	Pentachlorophenol	7.9	0.9	0.4	No
54	Phenol	4600000	0.4	0.2	No
55	2,4,6-Trichlorophenol	6.5	0.6	0.2	No
56	Acenaphthene	2700	0.17	0.17	No
57	Acenaphthylene	No Criteria	0.03	0.03	Uo
58	Anthracene	110000	0.3	0.16	No
59	Benzidine	0.00054	1	0.3	No
60	Benzo(a)Anthracene	0.049	0.12	0.12	No
61	Benzo(a)Pyrene	0.049	0.09	0.09	No
62	Benzo(b)Fluoranthene	0.049	0.11	0.11	No
63	Benzo(ghi)Perylene	No Criteria	0.06	0.06	Uo
64	Benzo(k)Fluoranthene	0.049	0.16	0.16	No

CTR No.	Priority Pollutants	Applicable WQO/WQC	MEC or Minimum DL[1] (µg/L)	Maximum Background or Minimum DL[1] (µg/L)	RP Determination
65	Bis(2-Chloroethoxy)Methane	No Criteria	0.9	0.3	Uo
66	Bis(2-Chloroethyl)Ether	1.4	0.7	0.3	No
67	Bis(2-Chloroisopropyl)Ether	170000	0.6	0.6	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	0.8	0.3	No
69	4-Bromophenyl Phenyl Ether	No Criteria	0.4	0.4	Uo
70	Butylbenzyl Phthalate	5200	0.8	0.4	No
71	2-Chloronaphthalene	4300	0.5	0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	0.5	0.4	Uo
73	Chrysene	0.049	0.14	0.14	No
74	Dibenzo(a,h)Anthracene	0.049	0.04	0.04	No
75	1,2-Dichlorobenzene	17000	0.2	0.12	No
76	1,3-Dichlorobenzene	2600	0.3	0.16	No
77	1,4-Dichlorobenzene	2600	2.6	0.12	No
78	3,3 Dichlorobenzidine	0.077	0.3	0.3	No
79	Diethyl Phthalate	120000	0.7	0.4	No
80	Dimethyl Phthalate	2900000	0.7	0.4	No
81	Di-n-Butyl Phthalate	12000	1	0.4	No
82	2,4-Dinitrotoluene	9.1	0.6	0.3	No
83	2,6-Dinitrotoluene	No Criteria	0.6	0.3	Uo
84	Di-n-Octyl Phthalate	No Criteria	0.9	0.4	Uo
85	1,2-Diphenylhydrazine	0.54	0.6	0.3	No
86	Fluoranthene	370	0.03	0.03	No
87	Fluorene	14000	0.02	0.02	No
88	Hexachlorobenzene	0.00077	0.4	0.4	No
89	Hexachlorobutadiene	50	0.7	0.2	No
90	Hexachlorocyclopentadiene	17000	0.4	0.1	No
91	Hexachloroethane	8.9	0.6	0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	0.04	0.04	No
93	Isophorone	600	0.8	0.3	No
94	Naphthalene	No Criteria	0.05	0.05	Uo
95	Nitrobenzene	1900	0.7	0.3	No
96	N-Nitrosodimethylamine	8.1	0.6	0.4	No
97	N-Nitrosodi-n-Propylamine	1.4	0.8	0.3	No
98	N-Nitrosodiphenylamine	16	0.7	0.4	No
99	Phenanthrene	No Criteria	0.03	0.03	Uo
100	Pyrene	11000	0.03	0.03	No
101	1,2,4-Trichlorobenzene	No Criteria	0.6	0.3	Uo
102	Aldrin	0.00014	0.003	0.003	No
103	alpha-BHC	0.013	0.003	0.002	No
104	beta-BHC	0.046	0.004	0.001	No
105	gamma-BHC	0.063	0.003	0.001	No
106	delta-BHC	No Criteria	0.002	0.001	Uo
107	Chlordane (303d listed)	0.00059	0.005	0.005	No
108	4,4'-DDT (303d listed)	0.00059	0.003	0.001	No

CTR No.	Priority Pollutants	Applicable WQO/WQC	MEC or Minimum DL[1] (µg/L)	Maximum Background or Minimum DL[1] (µg/L)	RP Determination
109	4,4'-DDE (linked to DDT)	0.00059	0.002	0.001	No
110	4,4'-DDD	0.00084	0.002	0.001	No
111	Dieldrin	0.00014	0.002	0.002	No
112	alpha-Endosulfan	0.0087	0.002	0.002	No
113	beta-Endolsulfan	0.0087	0.002	0.001	No
114	Endosulfan Sulfate	240	0.002	0.001	No
115	Endrin	0.0023	0.002	0.002	No
116	Endrin Aldehyde	0.81	0.002	0.002	No
117	Heptachlor	0.00021	0.003	0.003	No
118	Heptachlor Epoxide	0.00011	0.003	0.002	No
119-125	PCBs sum (2)	0.00017	0.07	0.07	No
126	Toxaphene	0.0002	0.4	0.2	No
	Tributylin	0.0074	0.0226	0.00143	Yes
	Total PAHs	15	0	0	No

[1] Values for MEC or maximum background in bold are the actual detected concentrations, otherwise the values shown are the minimum detection levels.
NA = Not Available (there is no monitoring data or WQO/WQC for this constituent).

[2] RP =Yes, if either MEC or background > WQO/WQC.
RP = No, if both MEC or background < WQO/WQC or all effluent concentrations non-detect and background <WQO/WQC or no background available.
RP = Uo (undetermined if no objective promulgated).
RP = Ud (undetermined due to lack of effluent data).

v) *Pollutants with no reasonable potential*: WQBELs are not included in the Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for those pollutants is still required, under the provisions of the Regional Water Board's August 6, 2001 Letter. If concentrations of these constituents are found to increase significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water. If the Discharger has fulfilled the sampling requirements according to its approved sampling plan submitted per the August 6, 2001 Letter, the Discharger shall perform a minimum of one sampling event of all 126 priority pollutants during the life of the permit, and submit the results at least 180 days prior to permit expiration (with the permit renewal application).

vi) *Permit reopener:* The permit includes a reopener provision to allow numeric effluent limitations to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Regional Water Board.

2) Dilution

Due to the tidal influence of the Bay on the Napa River near this discharge and the undefined mixing zone, the Regional Water Board considers the discharge as incompletely mixed. Pursuant to Section 1.4.2.1 of the SIP, for incompletely-mixed discharges, the Discharger

may demonstrate that a dilution credit is appropriate by performing mixing zone studies, such as a tracer study, a dye study, a modeling study, or monitoring upstream and downstream of the discharge to characterize the extent of actual dilution. Provision F.4 of this Order requires the Discharger to conduct a mixing zone study to justify an appropriate dilution credit. In the interim, the WQBELs are calculated with no dilution (D=0) and a 10:1 dilution (D=9) for wet season discharges. This expresses the range of wet season WQBELs once the appropriate dilution credit is determined. After the study is submitted and approved by the Executive Officer, the permit may be reopened to include revised WQBELs, as appropriate. The mixing zone information will also be considered in the next permit reissuance.

During the dry weather season from May 1 through October 31, the discharge is considered as a shallow water discharge, so no dilution credit is granted (D=0).

3) Applicable WQOs/WQC for WQBEL Calculation

Toxic substances are regulated by WQBELs derived from the Basin Plan, Tables 3-3 and 3-4, the CTR, the NTR, and/or best professional judgment (BPJ). WQBELs in this Order are revised and updated from the limits in the previous Order, and their presence in this Order is based on the evaluation of the Discharger's data as described below under the Reasonable Potential Analysis. Numeric WQBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. The WQOs or WQC used for each pollutant with Reasonable Potential is indicated in Table D below as well as in **Attachment 3** of the Fact Sheet.

Table D. Water Quality Objectives/Criteria for Pollutants with Reasonable Potential

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Human Health WQC (µg/L)	Basis of Lowest WQO /WQC Used in RP[1]
Copper	7.4	8.4	--	CTR, sw, site-specific translators
Mercury	0.025	2.1	0.051	BP, sw
Nickel	8.3	75	4,600	BP, sw
Selenium	5.0	20	NA	NTR, sw/fw
Cyanide	1	1	220,000	NTR, sw
TCDD TEQ	--	--	1.4×10^{-8}	BP, narrative
Tributyltin	0.0074	0.42	--	BP, narrative

[1] BP = Basin Plan, sw = salt water, fw = fresh water, NTR = National Toxics Rule

4) Interim Limitations

Interim effluent limitations were derived for those constituents (copper, mercury, selenium, and cyanide) for which the Discharger has shown infeasibility of complying with the

respective final limitations and has demonstrated that compliance schedules are justified based on the Discharger's source control and pollution minimization efforts in the past and continued efforts in the present and future. The interim effluent concentration limitations are either based on statistical analysis of the effluent data (i.e., copper), the previous permit limitations (i.e., mercury and cyanide), or the maximum effluent concentration (MEC) (i.e., selenium). The interim limitations are discussed in more detail below.

5) Feasibility Evaluation and Final WQBELs

The Discharger submitted an infeasibility to comply report on January 24, 2005 for copper, mercury, cyanide, and selenium, and submitted a supplemental on March 18, 2005 for tributyltin. For constituents that Regional Water Board staff could perform a meaningful statistical analysis (i.e., copper, mercury, and cyanide), it used self-monitoring data from September 2001 through April 2004 to compare the mean, 95th percentile, and 99th percentile with the long-term average (LTA), AMEL, and MDEL to confirm if it is feasible for the Discharger to comply with WQBELs. If any of the LTA, AMEL, and MDEL exceeds the mean, 95th percentile, and 99th percentile, the infeasibility for the Discharger to comply with WQBELs is confirmed statistically. Table E below shows these comparisons in µg/L:

Table E: Summary of Feasibility Analysis (unit: µg/L)

Constituent	Mean / LTA	95th / AMEL	99th / MDEL	Feasible to Comply
Copper (with 10:1 dilution and no dilution)	3.9>2.8	7.8>4.2	12.3 >8.4	**No**
Mercury (with 10:1 dilution and no dilution)	0.0078>0.004	0.016>0.012	0.032<0.039	**No**
Cyanide (with 10:1 dilution)	3.4>1.25	10.9>2.6	21.8>6.7	**No**
Cyanide (no dilution)	3.4>0.19	10.9>0.4	21.8>1.0	**No**
Selenium (with 10: 1 dilution and no dilution)	MEC (5)>AMEL (3.3)			**No**

For selenium, due to high censoring of the effluent data, it is not feasible to perform a meaningful statistical analysis. Since the MEC of 5 µg/L is above the AMEL of 2.3 µg/L, the infeasibility is substantiated.

For tributyltin, there are only two detected values out of eight measurements; therefore, it is not feasible to perform a meaningful statistical analysis to determine compliance. The Discharger has claimed that it is infeasible to achieve immediate compliance with the final WQBELs. Due to limited effluent data, the Regional Water Board concurred that it is infeasible for the Discharger to achieve immediate compliance. Also due to limited data, this Order does not establish an interim limitation for TBT. This Order requires the Discharger to continue monitoring TBT and develop pollution prevention activities to reduce concentrations in the effluent. The permit will be reopened, as appropriate, to include TBT limitations when additional data become available. Final WQBELs for TBT may be considered by the Regional Water Board in the next permit reissuance if the effluent continues to show reasonable potential.

For dioxin compounds, three of the eight effluent concentrations are below the AMEL, and the rest of the data are non-detect. Due to the limited effluent data, there is uncertainty in determining compliance or establishing an interim limitation. In addition, the MLs developed for 2,3,7,8-TCDD and all 16 congeners by the Regional Water Board and BACWA range from 5 pg/L to 50 pg/L, which are higher than the WQBELs. As a result, this permit does not contain an interim limitation for dioxin. The final limitations for dioxins will be based on the WLA assigned to the Discharger in the TMDL.

Table F below summarizes the calculated WQBELs, and the feasibility to comply analysis for all pollutants with effluent limitations. The WQBELs calculation is attached as **Attachment 4** of this Fact Sheet.

Table F. Final WQBELs and Feasibility to Comply

Pollutant	MDEL µg/L	AMEL µg/L	Feasible to Comply?
Copper (with 10:1 dilution and no dilution)	8.4	4.2	**No**
Mercury (with 10:1 dilution and no dilution)	0.039	0.012	**No**
Nickel (with 10:1 dilution and no dilution)	9.5	8.0	Yes
Selenium (with 10:1 dilution and no dilution)	9.2	3.3	**No**
Cyanide (with 10:1 dilution)	6.7	2.6	**No**
Cyanide (no dilution)	1.0	0.4	**No**
TCDD TEQ (with 10:1 dilution and no dilution)	2.8×10^{-8}	1.4×10^{-8}	**No**
Tributyltin (with 10:1 dilution)	0.1	0.05	**No**
Tributyltin (no dilution)	0.012	0.006	**No**

6) Interim Limitations and Compliance Schedules

This Order establishes a compliance schedule until April 27, 2010 for mercury for both wet and dry season discharges, until April 30, 2010 for copper; and until April 27, 2010 for cyanide during wet season discharges and for selenium during both wet and dry seasons. Since these compliance schedules exceed the length of the permit, the calculated final limitations are intended for point of reference for the feasibility demonstration. For dry weather discharges, since the previous permit has a compliance schedule until December 31, 2007 for copper and cyanide, which is five years from the effective date of the permit amendment Order No. R2-2002-0111. The final WQBELs for copper and cyanide shall become effective on January 1, 2008, or until the Regional Water Board adopts the SSOs for copper and cyanide.

During the compliance schedules, interim limitations are included based on current treatment facility performance or on previous permit limitations, whichever is more stringent, to maintain existing water quality. **Attachment 5** details the general basis for final compliance dates. The Regional Water Board may take appropriate enforcement actions if interim limitations and requirements are not met.

i. Copper – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for copper since the Discharger has demonstrated and the Regional Water Board verified that the final effluent limitations calculated according to the SIP will be infeasible to meet. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. Regional Water Board staff calculated an interim performance-based limitation (IPBL) of 21.5 µg/L (3 standard deviations above the mean), which is more stringent than the previous permit's effluent limitation of 34 µg/L. Therefore, 21.5 µg/L is established in this Order as the interim limitation, and will remain in effect until April 30, 2010 for wet weather discharges, and until December 31, 2007 for dry weather discharges, or until the Regional Water Board amends the limitation based on SSO or additional data.

ii. Mercury – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for mercury since the Discharger has demonstrated and the Regional Water Board verified that the final effluent limitations calculated according to the SIP will be infeasible to meet. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. The previous permit contains an interim limit of 0.087 µg/L, which was developed based on pooled effluent data from secondary POTWs in this region. This Order retains this IPBL, and it shall remain in effect until April 27, 2010, or until the Regional Water Board amends the limitation based on a WLA in the TMDL for mercury.

iii. Cyanide – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for cyanide since the Discharger has demonstrated and the Regional Water Board verified that the final effluent limitations calculated according to the SIP will be infeasible to meet. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. Regional Water Board staff calculated an interim performance-based limitation (IPBL) of 43.7 µg/L (3 standard deviations above the mean), however, this estimate is not considered as a good estimate due to high censoring of the data and the limited availability of statistical methods for censored data. The previous permit contains an interim limit of 25 µg/L based on pooled effluent cyanide data from several POTWs using activated sludge system. 25 µg/L is retained in this Order as the interim limitation, and shall remain in effect until April 27, 2010 for wet weather discharges, and until December 31, 2007 for dry weather discharges, or until the Regional Water Board amends the limitation based on addition information or an SSO.

iv. Selenium – Further Discussion and Rationale for Interim Effluent Limitation: Interim effluent limitations are required for selenium since the Discharger has demonstrated and the Regional Water Board verified that the final effluent limitations calculated according to the SIP will be infeasible to meet. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. Since most of the effluent data are non-detect, it is not possible to perform a meaningful statistical analysis to determine the 99.87^{th} percentile. The MEC of 5 µg/L is established in this Order as the interim limitation, and shall remain in effect until April 27, 2010, or until the Regional

Water Board amends the limitation based on a WLA in the TMDL for selenium. No interim selenium mass limitations are established in this Order. Wastewater treatment plants are considered insignificant sources of selenium loading to the Bay, as described in CEP's Selenium conceptual model dated November 2004. This approach is consistent with the current selenium TMDL strategy.

7) Attainability of Interim Performance-Based Limitations

i. Copper

During the period of September 2001 through April 2004, the Discharger's effluent concentrations for copper ranged from 1 µg/L to 13 µg/L (29 samples). All 29 samples are below the interim limitation of 21.5 µg/L. It is therefore expected that the facility can comply with the interim limitation for copper.

ii. Mercury

During the period of September 2001 through April 2004, the Discharger's effluent concentrations ranged from 0.008 µg/L to 0.15 µg/L (38 samples). Only one concentration, 10 times higher than the second highest concentration, was above the interim limitation. This value was statistically determined to be an outlier, assuming a lognormal distribution. It is, therefore, expected that the Discharger can comply with the interim limitation for mercury.

iii. Selenium

During the period of September 2001 through April 2004, the Discharger's MEC is 5 µg/L. There are only 7 detected concentrations out of 23 measurements. Therefore, it is expected that the Discharger can comply with the interim limit.

iv. Cyanide

During the period of September 2001 through April 2004, the Discharger's effluent concentrations ranged from 0.3 µg/L to 20 µg/L (36 samples). All 36 samples are below the interim limitation of 25 µg/L. It is therefore expected that the facility can comply with the interim limitation for cyanide.

8) Mercury Interim Mass Emission Limitation/Mass Trigger

The Order contains a mass emission limitation of 0.025 kilograms per month (kg/month) for mercury because the Regional Water Board has determined that there is reasonable potential for mercury in the Discharger's effluent and there is no additional assimilative capacity for mercury in the Bay and Delta system. This determination is consistent with SIP Section 2.1.1 requirements that the Regional Water Board consider whether additional assimilative capacity exists for 303(d)-listed bioaccumulative pollutants. That determination also considered the fact that elevated mercury in fish from the San Francisco Bay and Delta have been detected.

In addition, this Order contains a mass trigger of 0.014 kg/month for mercury. Exceeding the trigger value will initiate the actions contained in Provision F.7 of this Order.

The mercury mass trigger and limit are retained from the previous Order. The selenium mass trigger and limit were calculated using the river discharge flow and concentrations (based on 12-moving average mass loadings) from September 2001 through April 2004.

9) Comparison to Previous Permit Limitations

The effluent limitations for TSS, oil and grease, pH, and chlorine residual have been retained from the previous Order. Settleable solids effluent limits are no longer required. The interim effluent limitations for cyanide and mercury are unchanged from the previous Order. The interim limitation for copper is more stringent than the previous permit interim limit. The selenium effluent limit is new in this Order. The mercury mass limit and mass trigger are unchanged from the previous Order, the selenium mass limit and mass trigger are new in this Order. The effluent limits for acute and chronic toxicity are unchanged from the previous Order.

7. Basis for Pond Management Requirements

These requirements are from the previous permit and are based on BPJ. The triggers are specified for odor control. If the triggers are exceeded or if there is an odor nuisance, the facility shall identify and address the issue.

8. Basis for Receiving Water Limitations

(a) Receiving Water Limitations D.1 and D.2. These limitations are in the existing permit and are based on water quality objectives for physical, chemical, and biological characteristics from Chapter III of the Basin Plan.

(b) Receiving Water Limitation D.3. This limitation is in the existing permit, requires compliance with Federal and State law, and is self-explanatory.

(c) Receiving Water Limitation D.4. This limitation is based on storm water regulations intended to protect beneficial uses of receiving waters from storm water pollutants

9. Basis for Sludge Management Practices

Sludge Requirements E.1 through E.10. These requirements come from the Basin Plan (Chapter IV) and 40 CFR 257 and 503.

10. Basis for Self-Monitoring Requirements

Part A of the monitoring program is a standard requirement in almost all NPDES permits issued by the Regional Water Board. Most of the requirements are also existing requirements for the discharger. Part A contains definitions, specifies general sampling and analytical protocols, and specifies reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board policy. Part B of the monitoring program is specific for the discharger. It defines the stations, constituents, and

frequency of monitoring, and additional reporting requirements. Constituents required to be monitored include all parameters for which effluent limitations are specified. This is to allow determination of compliance with permit limits in accordance with 40 CFR 122.44(i).

The SMP Part B includes monitoring at the outfall for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. The sampling requirement for conventional and non-conventional pollutants has retained from the previous permit. Monthly acute bioassay is required to determine compliance with effluent limitations: This is the same as in the previous permit. Quarterly chronic toxicity test is required to determine compliance with the effluent limitations (this previous permit requires monthly chronic toxicity test, however, the Discharger has not performed any chronic toxicity testing). For copper, mercury, nickel, selenium, and cyanide, the Discharger will perform monthly monitoring to demonstrate compliance with effluent limitations. Moreover, the Discharger shall collect twice yearly monitoring for tributyltin and all the 2,3,7,8-TCDD congeners using the minimum detection limit that can be achieved. An emergency bypass monitoring station E-001-P was added in case emergency discharge from the ponds to the Napa River is required to prevent property loss. In lieu of near field discharge specific ambient monitoring, it is generally acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the Regional Water Board's August 6, 2001 Letter and the RMP. During the permit life, the Discharger shall perform a minimum one sampling event of the 126 priority pollutants, and submit the results with permit renewal application, at least 180 days prior to permit expiration.

12. Basis for Provisions

a) Provision F.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit is based on 40 CFR 122.46.

b) Provision F.2 (Effluent Characterization Study): This provision is based on the Basin Plan and the SIP.

c) Provision F.3 (Receiving Water Study): This provision is based on the Basin Plan and the SIP.

d) Provision F.4 (Mixing Zone Study): This provision is based on SIP, Section 1.4.2.1, requiring the Discharger to perform studies to demonstrate dilution for incompletely mixed discharges.

e) Provision F.5 (Cyanide Compliance Schedule and Site-Specific Objective (SSO) Study). This provision, based on BPJ, requires the Discharger to characterize background ambient cyanide concentrations and to participate in an on-going group effort to develop an SSO for cyanide.

f) Provision F.6 (Pollutant Prevention and Minimization Program): This provision is based on the Basin Plan, pages 4-25 – 4-28, and the SIP, Section 2.1.

g) Provision F.7 (Mercury Mass Loading Reduction): This provision will help to ensure no increases in mercury mass loadings until a TMDL and WLA are established. The Regional Water Board's determination of the need to maintain mass loadings at current levels for this bioaccumulative pollutant are based on Section 2.1.1 of the SIP.

h) Provision F.8 (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limitations for acute toxicity will be demonstrated. Conditions include the use of 96-hour flow-through bioassays, the use of fathead minnows and rainbow trout as the test species, and the use of approved test methods. These conditions are based on the effluent limits for acute toxicity given in the Basin Plan, Chapter 4, and BPJ.

i) Provision F.9. (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocol by which compliance with the Basin Plan narrative WQO for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). These conditions apply to the discharges to the Napa River and the numerical values for chronic toxicity evaluation. Higher trigger values are used for the wet season discharge, as there is likely to be more fresh ambient water in the vicinity of the discharge in general. These triggers may be revisited subsequent to the mixing zone study required by this Order. This provision also requires the Discharger to conduct screening phase monitoring and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. The screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the permit for chronic toxicity are based on the Basin Plan narrative WQO for toxicity, Basin Plan effluent limitations for chronic toxicity (Basin Plan, Chapter 4), U.S. EPA and State Water Board Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.

j) Provision F.10 (Optional Mass Offset): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to the Napa River/San Pablo Bay.

k) Provision F. 11 (Pretreatment Program): This provision requires the Discharger to implement and enforce its approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR Part 403).

l) Provision F.12 (Copper Local Limit): This provision requires the Discharger to issue a public notice, hold a public hearing if necessary, for increasing the copper local limit from 2.8 pounds/day to 5.0 pounds/day, this requirement is based on 40 CFR 403.18.

m) Provision F.13 (Sanitary Sewer Management Plan): This provision requires the Discharger to actively participate in the BACWA and the Regional Water Board collaborative effort to address SSOs. The effort is consistent with Regional Water Board Resolution No: R2-2003-0095.

n) Provision F. 14 (Wastewater Facilities, Review and Evaluation, Status Reports): This provision is based on the previous Order and the Basin Plan.

o) Provision F.15 (Operations and Maintenance Manual, Review and Status Reports) and F.16 (Contingency Plan, Review and Status Report): These provisions are based on the Basin Plan, the requirements of 40 CFR 122, and the previous permit.

p) Provision F.17 (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): Consistent with the SIP, the Discharger shall participate in the development of region-wide TMDL or SSO studies. By January 31 of each year, the Discharger shall submit an update to the Regional Water Board to document progress made on source control and pollutant minimization measures and development of TMDL or SSO. Regional Water Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

q) Provision F.18 (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limitations as necessary in response to updated WQOs that may be established in the future. This provision is based on 40 CFR 123.

r) Provision F.19 (Self-Monitoring Program): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.63. The SMP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. The SMP also contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

s) Provision F.20 (Standard Provisions and Reporting Requirements): The purpose of this provision is to require compliance with the standard provisions and reporting requirements given in this Regional Water Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the permit as an attachment to it. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.

t) Provision F.21 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.

u) Provision F.22 (Permit Reopener): This provision is based on 40 CFR 123.

v) Provision F.23 (NPDES Permit): This provision is based on 40 CFR 123.

w) Provisions F.24 (Order Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

V. WASTE DISCHARGE REQUIREMENT APPEALS

Any person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Regional Water Board public hearing.

VI. ATTACHMENTS

Attachment 1: Representative Ambient Hardness Value Calculation
Attachment 2: Effluent Data (Priority Inorganic Pollutants)
Attachment 3: RPA Results for Priority Pollutants
Attachment 4: Calculation of Final WQBELs
Attachment 5: General Basis for Final Compliance Dates

Attachment 1

Representative Ambient Hardness Value Calculation

Fact Sheet Attachment 1

Napa Sanitation District Ambient Hardness Calculation

Data Source	Sample Location	Sample Date	Hardness (mg/L)	Salinity(ppt)	Ln(Hardness)
Napa Source Investigation	1	10/15/03	80.8	0.1	4.39
Napa Source Investigation	1	11/19/03	124	0.2	4.82
Napa Source Investigation	1	12/17/03	75	0.1	4.32
Napa Source Investigation	1	01/21/04	72.7	0.1	4.29
Napa Source Investigation	2	10/15/03	232	0.24	5.45
Napa Source Investigation	2	11/19/03	206	0.2	5.33
Napa Source Investigation	2	12/17/03	103	0.12	4.63
Napa Source Investigation	2	01/21/04	128	0.14	4.85
Napa Source Investigation	3	12/17/03	103	0.12	4.63
Napa Source Investigation	3	01/21/04	133	0.15	4.89
Napa Source Investigation	3	03/17/04	140.8	0.144	4.95
Napa Source Investigation	3	03/31/04	163	0.293	5.09
Napa Source Investigation	3	04/14/04	178	0.155	5.18
Napa Source Investigation	3	05/12/04	186	0.195	5.23
Napa Source Investigation	3	06/09/04	183	0.202	5.21
Napa Source Investigation	3	07/07/04	199	0.21	5.29
Napa Source Investigation	4	12/17/03	121	0.33	4.80
Napa Source Investigation	4	01/21/04	120	0.15	4.79
Napa Source Investigation	4	03/17/04	121	0.144	4.80
Napa Source Investigation	4	03/31/04	153	0.308	5.03
Napa Source Investigation	4	04/14/04	180	0.237	5.19
Napa Source Investigation	5	01/21/04	263	0.89	5.57
Napa Source Investigation	5	03/17/04	137	0.267	4.92
Napa Source Investigation	5	03/31/04	157	0.44	5.06
Napa Source Investigation	N-1	03/17/04	174	0.514	5.16
NSD Monitoring	CC-1	1/18/2002	140	0.4	4.94
NSD Monitoring	CC-1	3/21/2002	130	0.3	4.87
NSD Monitoring	CC-1	1/14/2003	83	0.1	4.42
NSD Monitoring	CC-1	3/11/2003	220	0.6	5.39
NSD Monitoring	CC-1	1/7/2004	340	0.6	5.83
NSD Monitoring	CC-1	2/3/2004	260	0.9	5.56
NSD Monitoring	CC-1	3/2/2004	110	0.1	4.70
NSD Monitoring	CC-1	4/6/2004	270	0.8	5.60
NSD Monitoring	CC-2	1/18/2002	140	0.4	4.94
NSD Monitoring	CC-2	3/21/2002	130	0.4	4.87
NSD Monitoring	CC-2	1/14/2003	76	0.1	4.33
NSD Monitoring	CC-2	3/11/2003	270	0.9	5.60
NSD Monitoring	CC-2	1/7/2004	360	0.8	5.89
NSD Monitoring	CC-2	2/3/2004	240	0.8	5.48
NSD Monitoring	CC-2	3/2/2004	110	0.1	4.70
NSD Monitoring	CC-2	4/6/2004	300	0.9	5.70
NSD Monitoring	CC-3	1/18/2002	140	0.4	4.94
NSD Monitoring	CC-3	3/21/2002	170	0.7	5.14
NSD Monitoring	CC-3	1/14/2003	83	0.1	4.42
NSD Monitoring	CC-3	3/11/2003	260	0.8	5.56
NSD Monitoring	CC-3	1/7/2004	320	0.9	5.77
NSD Monitoring	CC-3	3/2/2004	110	0.1	4.70
NSD Monitoring	CC-4	1/18/2002	140	0.4	4.94
NSD Monitoring	CC-4	3/21/2002	150	0.5	5.01
NSD Monitoring	CC-4	1/14/2003	80	0.1	4.38
NSD Monitoring	CC-4	1/7/2004	320	1.0	5.77
NSD Monitoring	CC-4	3/2/2004	110	0.2	4.70
NSD Monitoring	CC-5	1/18/2002	140	0.4	4.94
NSD Monitoring	CC-5	1/14/2003	83	0.1	4.42
NSD Monitoring	CC-5	3/2/2004	110	0.1	4.70

Average	5.02
St. Dev.	0.43
St. Err	0.06
t0.7	0.5275 (with df=54)
Adjusted Mean	**147**

Attachment 2

Effluent Data
(Priority Inorganic Pollutants)

Fact Sheet Attachment 2

Napa Sanitationn District Priority Pollutant Effluent Data (Inorganics)

	Antimony		Beryllium		Cr(VI)		Thallium			As		Cd		Cr(III)		Pb		Ni		Ag		Se		Zn		Cu			Hg			CN		
10/1/02		**0.4**	<	0.1		**10**	<	0.1	9/7/01		**1**	<	0.1	<	0.5	<	0.25		**4**		0.1	<	1		**30**	9/7/01		**4.8**	9/7/01		**0.0073**	9/7/01	<	0.6
11/1/02		**0.3**	<	0.1		**10**		0.08	9/11/01		**0.7**	<	0.1	<	0.5	<	0.25		**3.3**	<	0.1	<	1		**10**	9/11/01		**1.4**	9/11/01		**0.0018**	9/7/01	<	3
12/1/02	J	**0.3**	<	0.1		**10**	<	0.1	9/19/01		**0.9**	<	0.1	<	0.5	<	0.25		**3.6**	<	0.1	<	1		**23**	9/14/01		**5.1**	9/13/01		**0.0072**	9/8/01		**2**
1/1/03						**10**			10/4/01				0.1	<	0.5	<	0.3		**3.2**	<	0.1				**12**	9/16/01		**6.7**	9/14/01		**0.0077**	9/8/01		**20**
2/1/03	J	**0.3**	<	0.2		**10**	<	0.03	10/5/2004	<	0.5	<		<	0.5										9/18/01		**2.4**	9/15/01		**0.0098**	9/8/01	<	0.6
3/1/03			<	0.2		**10**	<	0.1	10/11/01		**0.7**	<	0.1		0.6		0.4		**4.1**		0.2					9/19/01		**2.6**	9/16/01		**0.008**	9/11/01		**1**
4/1/03			<	0.2		**10**	J	0.03	10/11/2001										**4**	<	0.2				**20**	10/4/01		**1.5**	9/17/01		**0.0033**	9/13/01	<	0.6
6/1/03	J	**0.2**	<	0.1		**10**	<	0.1	11/15/01		**2**	<	0.2		0.6	<	0.5		**4**	<	0.2		5		**22**	10/11/01		**3.8**	9/18/01		**0.011**	9/13/01	<	3
11/1/03	<	0.2	<	0.1		**10**	J	0.05	12/6/01	<	0.5	<	0.1		0.7	<	0.25		**4.9**		0.2	<	1		**11**	10/11/01		**4.7**	9/19/01		**0.0036**	9/13/01	<	0.6
12/1/03	J	**0.2**	<	0.1		**10**	<	0.1	1/2/02	<	0.5	<	0.1	<	0.5		0.25		**3.3**	<	0.1	<	1		**15**	11/15/01		**13**	9/20/01		**0.0032**	9/13/01		**3**
1/1/04	J	**0.2**	<	0.1		**10**	<	0.1	2/7/02		0.9	<	0.1	<	0.5		0.3		**3.4**		0.3	<	1		**16**	12/6/01		**5**	9/27/01		**0.0019**	9/27/01	<	0.6
2/1/04	J	**0.03**	<	0.1		**5**	<	0.1	3/12/02		0.9	<	0.1	<	0.5	<	0.25		**3.9**	<	0.1	<	1		**17**	1/2/02		**3.6**	10/4/01		**0.0026**	10/4/01	<	0.6
3/1/04	<	0.5	<	0.1		**10**	<	0.1	4/9/02		0.9	<	0.1	<	0.5	<	0.25		**3.9**	<	0.1	<	1		**17**	2/7/02		**8**	10/5/01		**0.0033**	10/5/01	<	11
4/6/2004					<	10			10/1/02		0.5		0.1		0.4		0.05		**3.4**		0.1		0.6		**10**	3/12/02		**3.7**	10/11/01		**0.0052**	10/11/01		**8**
									11/22/02		0.9	<	0.1		0.6		0.057		**3.9**		0.07		0.7		**7**	4/9/02		**3.8**	10/11/01		**0.0056**	10/11/01	<	3
									12/12/02		1.1	<	0.1		0.6	J	0.084		**4.5**	<	0.1	<	0.5		**9**	10/1/02		**1**	10/11/01		**0.0098**	10/11/01	<	3
									1/16/03		0.9	<	0.1		0.7	J	0.072		**3**	<	0.1	<	0.5		**10**	11/22/02		**3.2**	10/11/01		**0.0062**	11/16/01		**7**
									2/11/03		0.8	<	0.1		0.5	J	0.048		**3.4**		0.2	J	0.6		**9**	12/12/02		**2**	11/16/01		**0.0039**	12/7/01	<	3
									3/10/03		1.1	<	0.1		0.6	<	0.25		**3.6**		0.1	<	0.5		**11**	1/16/03		**3.8**	12/7/01		**0.01**	1/3/02		**4**
									4/9/03		0.9	<	0.1		0.6	J	0.11		**3.4**		0.1	J	0.9		**27**	2/11/03		**4.2**	1/1/02		**0**	2/7/02	<	3
									6/8/03		0.8	<	0.1		0.6	J	0.087		**3.5**	<	0.1		1		**6**	3/10/03		**4.9**	1/31/02		**0**	3/13/02		**6**
									11/5/03	J	0.49	<	0.1	J	0.3	J	0.076		**4.2**	<	0.1	<	0.5		**7**	4/9/03		**4.2**	2/8/02		**0.15**	4/10/02		**6**
									12/4/03	J	0.4	<	0.1	J	0.4	J	0.084		**4.4**	<	0.1	J	0.7		**14**	6/8/03		**2**	3/13/02		**0.0038**	10/1/02		**1.8**
									1/7/04	J	0.48	<	0.1		0.7	J	0.093		**3.4**	<	0.1	<	0.5		**8**	11/5/03		**3.4**	4/10/02		**0.0026**	11/22/02		**5**
									2/2/04		0.6	<	0.1	J	0.3	J	0.059		**3.3**	<	0.1	<	0.5		**11**	12/4/03		**2.8**	10/1/02		**0.0008**	12/12/02	<	0.3
									3/1/04	J	0.2	<	0.1	J	0.2	J	0.076		**3.4**	<	0.1	<	1		**11**	1/7/04		**3**	11/22/02		**0.00086**	1/17/03	<	3
									4/7/2004		0.6	<	0.1			<	0.25		**3.3**	<	0.1	<	1		**11**	2/2/04		**3**	12/12/02		**0.0011**	2/11/03	<	3
																										3/1/04		**3.2**	1/17/03		**0.0017**	3/11/03	<	3
																										4/7/2004		**3.3**	2/11/03		**0.0033**	4/10/03		**5**
																													3/11/03		**0.0027**	6/9/03		**4**
																													4/10/03		**0.0015**	11/5/03		**9**
																													6/9/03		**0.001**	12/4/03		**7**
																													11/5/03		**0.0034**	1/7/04	<	3
																													12/4/03		**0.0025**	2/4/04		**4**
																													1/7/04		**0.0018**	3/1/04	<	3
																													2/2/04		**0.0016**	4/6/2004		**7**
																													2/4/04		**0.0015**			
																													3/1/04		**0.0013**			
																													4/6/2004		**0.0009**			

Attachment 3

RPA Results for Priority Pollutants

Fact Sheet Attachment 3

Napa Sanitation District
NPDES Permit Reissuance

Resonable Potential Analysis Results

Beginning			Step 2	Step 3					Step 4	Step 2	Step 3		Step 5		Step 6	Steps 7 & 8	Final Result	
	Constituent name	C (µg/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	If all data points are ND and MinDL>C, interim monitoring is required	Concentration from the effluent (MEC) (MEC= deteted max value; if all ND & MDL<C then MEC = MDL)	MEC vs. C 1. If MEC> or =C, effluent limitation is required; 2. If MEC<C, go to Step 5	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant B detected max conc (ug/L)	If all B is ND, is MDL>C?	B vs. C If B>C, effluent limitation is required	7) Review other information in the SIP page 4. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements.	RPA Result	Reason
1	Antimony	4,300	Y	N		0.4		0.4	MEC<C, go to Step 5	Y	N		1.7		B<C, Step 7		No	MEC<C & B<C
2	Arsenic [b]	36	Y	N		2		2	MEC<C, go to Step 5	Y	N		34		B<C, Step 7		No	MEC<C & B<C
3	Beryllium	No Criteria	Y	Y	0.06		No Criteria	No Criteria	No Criteria	Y	Y	0.06		N	No Criteria	No Criteria	Uo	No Criteria
4	Cadmium [b]	1.53	Y	N		0.1		0.1	MEC<C, go to Step 5	Y	N		0.04		B<C, Step 7		No	MEC<C & B<C
5a	Chromium (III)	283.77	N				No effluent data			Y	N		2.6		B<C, Step 7		Ud	no effluent data & B<C
5b	Chromium (VI) [b]	11.43	Y	N		0.7		0.7	MEC<C, go to Step 5	Y	N		0.4		B<C, Step 7		No	MEC<C & B<C
6	Copper (303d listed) [c]	7.38	Y	N		13		13	MEC>=C, Effluent Limits Required	Y	N		18.5		B>C, Effluent Limit Required		Yes	MEC>=C
7	Lead [b]	5.20	Y	N		0.3		0.3	MEC<C, go to Step 5	Y	N		0.78		B<C, Step 7		No	MEC<C & B<C
8	Mercury (303d listed) [b]	0.025	Y	N		0.15		0.15	MEC>=C, Effluent Limits Required	Y	N		0.011		B<C, Step 7		Yes	MEC>=C
9	Nickel [b]	8.28	Y	N		4.9		4.9	MEC<C, go to Step 5	Y	N		68.7		B>C, Effluent Limit Required		Yes	B>C
10	Selenium (303d listed) [b]	5.00	Y	N		5		5	MEC>=C, Effluent Limits Required	Y	N		19		B>C, Effluent Limit Required		Yes	MEC>=C
11	Silver [b]	2.24	Y	N		0.3		0.3	MEC<C, go to Step 5	Y	Y	0.02		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
12	Thallium	6.30	Y	N		0.08		0.08	MEC<C, go to Step 5	Y	N		0.3		B<C, Step 7		No	MEC<C & B<C
13	Zinc [b]	85.62	Y	N		30		30	MEC<C, go to Step 5	Y	N		10		B<C, Step 7		No	MEC<C & B<C
14	Cyanide [b]	1.00	Y	N		20		20	MEC>=C, Effluent Limits Required	Y	N		0.363		B<C, Step 7		Yes	MEC>=C
15	Asbestos	No Criteria	N				No Criteria	No Criteria	No Criteria	Y	Y	0.2		N	No Criteria	No Criteria	Uo	No Criteria
	TCDD TEQ (303d listed)	0.000000014	Y	N		2E-09		0.000000002	MEC<C, go to Step 5	Y	N		3.68E-08		B>C, Effluent Limit Required		Yes	B>C
17	Acrolein	780	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5	Y	Y	1		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
18	Acrylonitrile	0.66	Y	Y	1		All ND, MinDL>C, Go to Step 5			Y	Y	1		Y	No detected value of B, Step		No	UD; effluent data and B are ND
19	Benzene	71	Y	Y	0.3		All ND, MDL<C, MEC=MDL	0.3	MEC<C, go to Step 5	Y	Y	0.27		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
20	Bromoform	360	Y	N		0.9		0.9	MEC<C, go to Step 5	Y	Y	0.1		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
21	Carbon Tetrachloride	4.4	Y	N		1		1	MEC<C, go to Step 5	Y	Y	0.42		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
22	Chlorobenzene	21,000	Y	Y	0.3		All ND, MDL<C, MEC=MDL	0.3	MEC<C, go to Step 5	Y	Y	0.19		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
23	Chlorodibromomethane	34	Y	N		11		11	MEC<C, go to Step 5	Y	Y	0.18		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
24	Chloroethane	No Criteria	Y	Y	0.34		No Criteria	No Criteria	No Criteria	Y	Y	0.34		N	No Criteria	No Criteria	Uo	No Criteria
25	2-Chloroethylvinyl ether	No Criteria	Y	Y	0.32		No Criteria	No Criteria	No Criteria	Y	Y	0.31		N	No Criteria	No Criteria	Uo	No Criteria
26	Chloroform	No Criteria	Y	N		48	No Criteria	No Criteria	No Criteria	Y	Y		1.5		No Criteria	No Criteria	Uo	No Criteria
27	Dichlorobromomethane	46	Y	N		23		23	MEC<C, go to Step 5	Y	Y		0.6		B<C, Step 7		No	Ud;MEC<C & B is ND
28	1,1-Dichloroethane	No Criteria	Y	Y	0.49		No Criteria	No Criteria	No Criteria	Y	Y	0.28		N	No Criteria	No Criteria	Uo	No Criteria
29	1,2-Dichloroethane	99	Y	Y	0.2		All ND, MDL<C, MEC=MDL	0.2	MEC<C, go to Step 5	Y	Y	0.16		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
30	1,1-Dichloroethylene	3.2	Y	Y	0.49		All ND, MDL<C, MEC=MDL	0.49	MEC<C, go to Step 5	Y	Y	0.37		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
31	1,2-Dichloropropane	39	Y	Y	0.2		All ND, MDL<C, MEC=MDL	0.2	MEC<C, go to Step 5	Y	Y	0.2		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
32	1,3-Dichloropropylene	1,700	Y	Y	0.5		All ND, MDL<C, MEC=MDL	0.5	MEC<C, go to Step 5	Y	Y	0.2		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
33	Ethylbenzene	29,000	Y	Y	0.4		All ND, MDL<C, MEC=MDL	0.4	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
34	Methyl Bromide	4,000	Y	N		0.7		0.7	MEC<C, go to Step 5	Y	Y	0.42		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
35	Methyl Chloride	No Criteria	Y	N		1.5	No Criteria	No Criteria	No Criteria	Y	Y	0.36		N	No Criteria	No Criteria	Uo	No Criteria
36	Methylene Chloride	1,600	Y	Y	0.4		All ND, MDL<C, MEC=MDL	0.4	MEC<C, go to Step 5	Y	Y	0.38		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
37	1,1,2,2-Tetrachloroethane	11	Y	Y	0.3		All ND, MDL<C, MEC=MDL	0.3	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
38	Tetrachloroethylene	8.85	Y	N		0.5		0.5	MEC<C, go to Step 5	Y	Y	0.32		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
39	Toluene	200,000	Y	N		4.9		4.9	MEC<C, go to Step 5	Y	Y	0.25		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
40	1,2-Trans-Dichloroethylen	140,000	Y	Y	0.43		All ND, MDL<C, MEC=MDL	0.43	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
41	1,1,1-Trichloroethane	No Criteria	Y	Y	0.49		No Criteria	No Criteria	No Criteria	Y	Y	0.35		N	No Criteria	No Criteria	Uo	No Criteria
42	1,1,2-Trichloroethane	42	Y	Y	0.3		All ND, MDL<C, MEC=MDL	0.3	MEC<C, go to Step 5	Y	Y	0.27		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
43	Trichloroethylene	81	Y	Y	0.3		All ND, MDL<C, MEC=MDL	0.3	MEC<C, go to Step 5	Y	Y	0.29		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
44	Vinyl Chloride	525	Y	Y	0.47		All ND, MDL<C, MEC=MDL	0.47	MEC<C, go to Step 5	Y	Y	0.34		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
45	2-Chlorophenol	400	Y	Y	0.6		All ND, MDL<C, MEC=MDL	0.6	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
46	2,4-Dichlorophenol	790	Y	Y	0.7		All ND, MDL<C, MEC=MDL	0.7	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
47	2,4-Dimethylphenol	2,300	Y	Y	0.9		All ND, MDL<C, MEC=MDL	0.9	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
48	2-Methyl-4,6-Dinitrophene	765	Y	Y	0.9		All ND, MDL<C, MEC=MDL	0.9	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
49	2,4-Dinitrophenol	14,000	Y	Y	0.6		All ND, MDL<C, MEC=MDL	0.6	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
50	2-Nitrophenol	No Criteria	Y	Y	0.7		No Criteria	No Criteria	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
51	4-Nitrophenol	No Criteria	Y	Y	0.6		No Criteria	No Criteria	No Criteria	Y	Y	0.2		N	No Criteria	No Criteria	Uo	No Criteria
52	3-Methyl 4-Chlorophenol	No Criteria	Y	Y	0.5		No Criteria	No Criteria	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
53	Pentachlorophenol	7.90	Y	Y	0.9		All ND, MDL<C, MEC=MDL	0.9	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
54	Phenol	4,600,000	Y	Y	0.4		All ND, MDL<C, MEC=MDL	0.4	MEC<C, go to Step 5	Y	Y	0.2		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
55	2,4,6-Trichlorophenol	6.50	Y	Y	0.6		All ND, MDL<C, MEC=MDL	0.6	MEC<C, go to Step 5	Y	Y	0.2		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
56	Acenaphthene	2,700	Y	Y	0.17		All ND, MDL<C, MEC=MDL	0.17	MEC<C, go to Step 5	Y	Y	0.17		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
57	Acenaphthylene	No Criteria	Y	Y	0.03		No Criteria	No Criteria	No Criteria	Y	Y	0.03		N	No Criteria	No Criteria	Uo	No Criteria
58	Anthracene	110,000	Y	Y	0.3		All ND, MDL<C, MEC=MDL	0.3	MEC<C, go to Step 5	Y	Y	0.16		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
59	Benzidine	0.00054	Y	Y	1		All ND, MinDL>C, Go to Step 5			Y	Y	0.3		Y	No detected value of B, Step		No	UD; effluent data and B are ND
60	Benzo(a)Anthracene	0.049	Y	Y	0.12		All ND, MinDL>C, Go to Step 5			Y	Y	0.12		Y	No detected value of B, Step		No	UD; effluent data and B are ND
61	Benzo(a)Pyrene	0.049	Y	Y	0.09		All ND, MinDL>C, Go to Step 5			Y	Y	0.09		Y	No detected value of B, Step		No	UD; effluent data and B are ND
62	Benzo(b)Fluoranthene	0.049	Y	Y	0.11		All ND, MinDL>C, Go to Step 5			Y	Y	0.11		Y	No detected value of B, Step		No	UD; effluent data and B are ND
63	Benzo(ghi)Perylene	No Criteria	Y	Y	0.06		No Criteria	No Criteria	No Criteria	Y	Y	0.06		N	No Criteria	No Criteria	Uo	No Criteria
64	Benzo(k)Fluoranthene	0.049	Y	Y	0.16		All ND, MinDL>C, Go to Step 5			Y	Y	0.16		Y	No detected value of B, Step		No	UD; effluent data and B are ND
65	Bis(2-Chloroethoxy)Methe	No Criteria	Y	Y	0.9		No Criteria	No Criteria	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
66	Bis(2-Chloroethyl)Ether	1.40	Y	Y	0.7		All ND, MDL<C, MEC=MDL	0.7	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
67	Bis(2-Chloroisopropyl)Eth	170,000	Y	Y	0.6		All ND, MDL<C, MEC=MDL	0.6	MEC<C, go to Step 5	Y	Y	0.6		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
68	Bis(2-Ethylhexyl)Phthalate	5.90	Y	Y	0.8		All ND, MDL<C, MEC=MDL	0.8	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
69	4-Bromophenyl Phenyl Eth	No Criteria	Y	Y	0.4		No Criteria	No Criteria	No Criteria	Y	Y	0.4		N	No Criteria	No Criteria	Uo	No Criteria
70	Butylbenzyl Phthalate	5,200	Y	Y	0.8		All ND, MDL<C, MEC=MDL	0.8	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
71	2-Chloronaphthalene	4,300	Y	Y	0.5		All ND, MDL<C, MEC=MDL	0.5	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
72	4-Chlorophenyl Phenyl Eth	No Criteria	Y	Y	0.5		No Criteria	No Criteria	No Criteria	Y	Y	0.4		N	No Criteria	No Criteria	Uo	No Criteria
73	Chrysene	0.049	Y	Y	0.14		All ND, MinDL>C, Go to Step 5			Y	Y	0.14		Y	No detected value of B, Step		No	UD; effluent data and B are ND
74	Dibenzo(a,h)Anthracene	0.049	Y	Y	0.04		All ND, MDL<C, MEC=MDL	0.04	MEC<C, go to Step 5	Y	Y	0.04		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
75	1,2-Dichlorobenzene	17,000	Y	Y	0.2		All ND, MDL<C, MEC=MDL	0.2	MEC<C, go to Step 5	Y	Y	0.12		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
76	1,3-Dichlorobenzene	2,600	Y	Y	0.3		All ND, MDL<C, MEC=MDL	0.3	MEC<C, go to Step 5	Y	Y	0.16		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
77	1,4-Dichlorobenzene	2,600	Y	N		2.6		2.6	MEC<C, go to Step 5	Y	Y	0.12		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
78	3,3 Dichlorobenzidine	0.077	Y	Y	0.3		All ND, MinDL>C, Go to Step 5			Y	Y	0.3		Y	No detected value of B, Step		No	UD; effluent data and B are ND
79	Diethyl Phthalate	120,000	Y	Y	0.7		All ND, MDL<C, MEC=MDL	0.7	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
80	Dimethyl Phthalate	2,900,000	Y	Y	0.7		All ND, MDL<C, MEC=MDL	0.7	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
81	Di-n-Butyl Phthalate	12,000	Y	Y	1		All ND, MDL<C, MEC=MDL	1	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
82	2,4-Dinitrotoluene	9.10	Y	Y	0.6		All ND, MDL<C, MEC=MDL	0.6	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
83	2,6-Dinitrotoluene	No Criteria	Y	Y	0.6		No Criteria	No Criteria	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
84	Di-n-Octyl Phthalate	No Criteria	Y	Y	0.9		No Criteria	No Criteria	No Criteria	Y	Y	0.4		N	No Criteria	No Criteria	Uo	No Criteria

Fact Sheet Attachment 3

Napa Sanitation District
NPDES Permit Reissuance

Resonable Potential Analysis Results

Beginning			Step 2	Step 3					Step 4	Step 2	Step 3		Step 5		Step 6		Steps 7 & 8	Final Result	
	Constituent name	C (µg/L) Lowest (most stringent) Criteria (Enter "No Criteria" for no criteria)	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)	If all data points are ND and MinDL>C, interim monitoring is required	Concentration from the effluent (MEC) (MEC= deteted max value; if all ND & MDL<C then MEC = MDL)	MEC vs. C 1. If MEC> or =C, effluent limitation is required; 2. If MEC<C, go to Step 5	B Available (Y/N)?	Are all B data points non-detects (Y/N)?	If all data points ND Enter the min detection limit (MDL) (ug/L)	Enter the pollutant B detected max conc (ug/L)	If all B is ND, is MDL>C?	B vs. C If B>C, effluent limitation is required	7) Review other information in the SIP page 4. If information is unavailable or insufficient: 8) the RWQCB shall establish interim monitoring requirements.	RPA Result	Reason
85	1,2-Diphenylhydrazine	0.54	Y	Y	0.6		All ND, MinDL>C, Go to Step 5			Y	Y	0.3		N	No detected value of B, Step		No	UD; effluent data and B are ND
86	Fluoranthene	370	Y	Y	0.03		All ND, MDL<C, MEC=MDL	0.03	MEC<C, go to Step 5	Y	Y	0.03		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
87	Fluorene	14,000	Y	Y	0.02		All ND, MDL<C, MEC=MDL	0.02	MEC<C, go to Step 5	Y	Y	0.02		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
88	Hexachlorobenzene	0.00077	Y	Y	0.4		All ND, MinDL>C, Go to Step 5			Y	Y	0.4		Y	No detected value of B, Step		No	UD; effluent data and B are ND
89	Hexachlorobutadiene	50	Y	Y	0.7		All ND, MDL<C, MEC=MDL	0.7	MEC<C, go to Step 5	Y	Y	0.2		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
90	Hexachlorocyclopentadien	17,000	Y	Y	0.4		All ND, MDL<C, MEC=MDL	0.4	MEC<C, go to Step 5	Y	Y	0.1		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
91	Hexachloroethane	8.90	Y	Y	0.6		All ND, MDL<C, MEC=MDL	0.6	MEC<C, go to Step 5	Y	Y	0.2		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
92	Indeno(1,2,3-cd)Pyrene	0.049	Y	Y	0.04		All ND, MDL<C, MEC=MDL	0.04	MEC<C, go to Step 5	Y	Y	0.04		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
93	Isophorone	600	Y	Y	0.8		All ND, MDL<C, MEC=MDL	0.8	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
94	Naphthalene	No Criteria	Y	Y	0.05		No Criteria	No Criteria	No Criteria	Y	Y	0.05		N	No Criteria	No Criteria	Uo	No Criteria
95	Nitrobenzene	1,900	Y	Y	0.7		All ND, MDL<C, MEC=MDL	0.7	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
96	N-Nitrosodimethylamine	8.10	Y	Y	0.6		All ND, MDL<C, MEC=MDL	0.6	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
97	N-Nitrosodi-n-Propylamin	1.40	Y	Y	0.8		All ND, MDL<C, MEC=MDL	0.8	MEC<C, go to Step 5	Y	Y	0.3		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
98	N-Nitrosodiphenylamine	16	Y	Y	0.7		All ND, MDL<C, MEC=MDL	0.7	MEC<C, go to Step 5	Y	Y	0.4		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
99	Phenanthrene	No Criteria	Y	Y	0.03		No Criteria	No Criteria	No Criteria	Y	Y	0.03		N	No Criteria	No Criteria	Uo	No Criteria
100	Pyrene	11,000	Y	Y	0.03		All ND, MDL<C, MEC=MDL	0.03	MEC<C, go to Step 5	Y	Y	0.03		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
101	1,2,4-Trichlorobenzene	No Criteria	Y	Y	0.6		No Criteria	No Criteria	No Criteria	Y	Y	0.3		N	No Criteria	No Criteria	Uo	No Criteria
102	Aldrin	0.00014	Y	Y	0.003		All ND, MinDL>C, Go to Step 5			Y	Y	0.003		Y	No detected value of B, Step		No	UD; effluent data and B are ND
103	alpha-BHC	0.013	Y	Y	0.003		All ND, MDL<C, MEC=MDL	0.003	MEC<C, go to Step 5	Y	Y	0.002		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
104	beta-BHC	0.046	Y	Y	0.004		All ND, MDL<C, MEC=MDL	0.004	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
105	gamma-BHC	0.063	Y	Y	0.003		All ND, MDL<C, MEC=MDL	0.003	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
106	delta-BHC	No Criteria	Y	Y	0.002		No Criteria	No Criteria	No Criteria	Y	Y	0.001		N	No Criteria	No Criteria	Uo	No Criteria
107	Chlordane (303d listed)	0.00059	Y	Y	0.005		All ND, MinDL>C, Go to Step 5			Y	Y	0.005		Y	No detected value of B, Step		No	UD; effluent data and B are ND
108	4,4'-DDT (303d listed)	0.00059	Y	Y	0.003		All ND, MinDL>C, Go to Step 5			Y	Y	0.001		Y	No detected value of B, Step		No	UD; effluent data and B are ND
109	4,4'-DDE (linked to DDT)	0.00059	Y	Y	0.002		All ND, MinDL>C, Go to Step 5			Y	Y	0.001		Y	No detected value of B, Step		No	UD; effluent data and B are ND
110	4,4'-DDD	0.00084	Y	Y	0.002		All ND, MinDL>C, Go to Step 5			Y	Y	0.001		Y	No detected value of B, Step		No	UD; effluent data and B are ND
111	Dieldrin (303d listed)	0.00014	Y	Y	0.002		All ND, MinDL>C, Go to Step 5			Y	Y	0.002		Y	No detected value of B, Step		No	UD; effluent data and B are ND
112	alpha-Endosulfan	0.0087	Y	Y	0.002		All ND, MDL<C, MEC=MDL	0.002	MEC<C, go to Step 5	Y	Y	0.002		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
113	beta-Endolsulfan	0.0087	Y	Y	0.002		All ND, MDL<C, MEC=MDL	0.002	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
114	Endosulfan Sulfate	240	Y	Y	0.002		All ND, MDL<C, MEC=MDL	0.002	MEC<C, go to Step 5	Y	Y	0.001		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
115	Endrin	0.0023	Y	Y	0.002		All ND, MDL<C, MEC=MDL	0.002	MEC<C, go to Step 5	Y	Y	0.002		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
116	Endrin Aldehyde	0.81	Y	Y	0.002		All ND, MDL<C, MEC=MDL	0.002	MEC<C, go to Step 5	Y	Y	0.002		N	No detected value of B, Step		No	Ud;MEC<C & B is ND
117	Heptachlor	0.00021	Y	Y	0.003		All ND, MinDL>C, Go to Step 5			Y	Y	0.003		Y	No detected value of B, Step		No	UD; effluent data and B are ND
118	Heptachlor Epoxide	0.00011	Y	Y	0.003		All ND, MinDL>C, Go to Step 5			Y	Y	0.002		Y	No detected value of B, Step		No	UD; effluent data and B are ND
119-125	PCBs sum (2)	0.00017	Y	Y	0.07		All ND, MinDL>C, Go to Step 5			Y	Y	0.07		Y	No detected value of B, Step		No	UD; effluent data and B are ND
126	Toxaphene	0.00020	Y	Y	0.4		All ND, MinDL>C, Go to Step 5			Y	Y	0.2		Y	No detected value of B, Step		No	UD; effluent data and B are ND
	Tributyltin	0.00740	Y	N		0.0226		0.0226	MEC>=C, Effluent Limits Required	Y	Y	0.00143		N	No detected value of B, Step		Yes	MEC>=C
	Total PAHs	15.00000	Y	N		0		0	MEC<C, go to Step 5	Y	N		0		B<C, Step 7		No	MEC<C & B<C

a. The most stringent of salt and fresh water criteria were selected for this analysis.

b. According to Table 1 of Section (b)(1) of CTR (40CFR 131.38), those criteria should use Basin Plan objectives; criteria for Se and CN are specified by the NTR.

c. Criteria for copper is taken from CTR. CTR criteria for copper is expressed as dissolved metals. The copper criter in the table is adjusted by dividing by the site-specific translators to convert the dissovled to total metal concetration, The criteria for Selenium is taken from NTR.

d. Acronyms in the "Final Result" column: Ud: Cannot determine reasonable potential due to the absence of data or because Minimum DL is greater than water quality objective or CTR criteria
IM: Interim monitoring is required

Attachment 4

Calculation of Final WQBELs
(1) With 10:1 Dilution and (2) With No Dilution

Fact Sheet Attachment 4 (1)

Napa Sanitation District NPDES Permit Reissuance
WQBEL Calculation with 10:1 Dilution

PRIORITY POLLUTANTS	Copper	Mercury	Nickle	Cyanide	Selenium	TCDD TEQ	Tributyltin
Units	ug/L	ug/L	ug/L	ug/L	ug/L	pg/L	ug/L
Basis and Criteria type	CTR SW	BP SW (4-d, 1-hr avg)	BP SW	NTR SW	NTR	BP, narrative	BP, narrative
Lowest WQO	7.40	0.025	8.30	1.00	5.00	0.014	0.0074
Translators							
Dilution Factor (D) (if applicable)	9	0	9	9	0	0	9
No. of samples per month	4	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	N	Y	N
Applicable Acute WQO	8.40	2.1	75	1	20	NA	0.42
Applicable Chronic WQO	7.40	0.025	8.3	1	5	NA	0.0074
HH criteria		0.051	4600	220000		0.014	NA
Background (max conc for Aq Life calc)	18.5	0.011	68.7	0.363	19		0.00164
Background (avg conc for HH calc)		0.00700	7.50	0.21		0.0131	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	Y	N	N	Y	Y	N
ECA acute	8.4	2.1	131.7	6.733	20		4.18524
ECA chronic	7.4	0.025	8.3	6.733	5		0.05924
ECA HH		0.051	45932.5	2199998.1		0.014	
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	Y	Y
Avg of effluent data points	3.934	0.0078	3.7038	3.4375	0.6957		
Std Dev of effluent data points	2.306	0.0239	0.4626	3.8151	0.9595		
CV calculated	0.59	3.06	0.12	1.11	1.38	N/A	N/A
CV (Selected) - Final	0.59	3.06	0.12	1.11	1.38	0.6	0.6
ECA acute mult99	0.33	0.09	0.75	0.19	0.15		0.32
ECA chronic mult99	0.53	0.14	0.87	0.34	0.28		0.53
LTA acute	2.75	0.19	99.37	1.25	3.09		1.34381
LTA chronic	3.96	0.004	7.19	2.31	1.42		0.03
minimum of LTAs	2.75	0.004	7.19	1.25	1.42		0.03125
AMEL mult95	1.54	3.33	1.11	2.05	2.30	1.55	1.55
MDEL mult99	3.05	10.89	1.33	5.38	6.48	3.11	3.11
AMEL (aq life)	4.23	0.012	7.95	2.57	3.27		0.04851
MDEL(aq life)	8.40	0.039	9.53	6.73	9.22		0.10
MDEL/AMEL Multiplier	1.98	3.27	1.20	2.62	2.82	2.01	2.01
AMEL (human hlth)		0.051	45933	2199998		0.014	
MDEL (human hlth)		0.167	55044	5772071		0.028	
minimum of AMEL for Aq. life vs HH	4.2	0.012	8.0	2.6	3.3	0.014	0.05
minimum of MDEL for Aq. Life vs HH	8.4	0.039	9.5	6.7	9.2	0.028	0.10
MEC	13.0	0.150	4.9	20.0	5.0	5.0	0.0226
Previous permit inteirm limit	34.0	0.087	NA	25.0	NA	NA	NA
Feasibility to comply?	N	N	Y	N	N	N	N
Inteirm limitation	21.5	0.087	NA	25	5.00	NA	NA
Mean	3.9	0.0078	3.70	3.4			
95th	7.8	0.016	4.50	10.9			
99th	12.3	0.032	4.80	21.8	MEC>AMEL	ML>AMEL	Limited data
99.87th	21.5	0.062	5.30	43.7			
distribution	loglogistic	lognormal	lognormal	lognormal			

Fact Sheet Attachment 4(2)

Napa Sanitation District NPDES Permit Reissuance
WQBEL Calculation: No Dilution

PRIORITY POLLUTANTS	Copper	Mercury	Cyanide	Nickle	Selenium	TCDD TEQ	Tributyltin
Units	ug/L	ug/L	ug/L	ug/L	ug/L	pg/L	ug/L
Basis and Criteria type	CTR SW	BP SW (4-d, 1-hr avg)	NTR SW	BP SW	NTR	CTR,hh	BP, narrative
Lowest WQO	7.40	0.025	1.00	8.30	5.00	0.014	0.0074
Translators							
Dilution Factor (D) (if applicable)	0	0	0	0	0	0	0
No. of samples per month	4	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	N	Y	N
Applicable Acute WQO	8.40	2.1	1	75	20	na	0.46
Applicable Chronic WQO	7.40	0.025	1	8.3	5	na	0.0074
HH criteria		0.051	220000	4600		0.014	NA
Background (max conc for Aq Life calc)	18.5	0.011	0.363	68.7	19		0.00164
Background (avg conc for HH calc)		0.00700	0.21	7.50		0.0131	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	Y	N	N	Y	Y	N
ECA acute	8.4	2.1	1	75	20		0.46
ECA chronic	7.4	0.025	1	8.3	5		0.0074
ECA HH		0.051	220000	4600		0.014	
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	N	Y
Avg of effluent data points	3.934	0.0078	3.4375	3.7038	0.6957		
Std Dev of effluent data points	2.306	0.0239	3.8151	0.4626	0.9595		
CV calculated	0.59	3.06	1.11	0.12	1.38	N/A	N/A
CV (Selected) - Final	0.59	3.06	1.11	0.12	1.38	0.6	0.6
ECA acute mult99	0.33	0.09	0.19	0.75	0.15		0.32
ECA chronic mult99	0.53	0.14	0.34	0.87	0.28		0.53
LTA acute	2.75	0.19	0.19	56.59	3.09		0.14770
LTA chronic	3.96	0.004	0.34	7.19	1.42		0.00
minimum of LTAs	2.75	0.004	0.19	7.19	1.42		0.00390
AMEL mult95	1.54	3.33	2.05	1.11	2.30	1.55	1.55
MDEL mult99	3.05	10.89	5.38	1.33	6.48	3.11	3.11
AMEL (aq life)	4.23	0.012	0.38	7.95	3.27		0.00606
MDEL(aq life)	8.40	0.039	1.00	9.53	9.22		0.01
MDEL/AMEL Multiplier	1.98	3.27	2.62	1.20	2.82	2.01	2.01
AMEL (human hlth)		0.051	220000	4600		0.014	
MDEL (human hlth)		0.167	577208	5512		0.028	
minimum of AMEL for Aq. life vs HH	4.23	0.01	0.38	7.95	3.27	0.014	0.006
minimum of MDEL for Aq. Life vs HH	8.40	0.039	1.00	9.53	9.22	0.028	0.012
							0.0226
Final limit - AMEL	4.2	0.012	0.4	8.0	3.3	0.014	NA
Final limit - MDEL	8.4	0.039	1.0	9.5	9.2	0.028	N
Max Effl Conc (MEC)	13.0	0.15	20	4.9	5.0	0.0002	0.0226
Feasibility to comply?	No	No	No	Yes	No	No	No
Inteirm limit	21.5	0.087	25	NA	5.00	NA	NA

Note: interim limits for copper an cyanided only effect until December 31, 2007, interim limit for mercury effect until March 31, 2010.

Attachment 5

General Basis for Final Compliance Dates

Fact Sheet Attachment 5

General Basis for Final Compliance Dates [1]
for Discharges North of the Dumbarton Bridge
Revised March 21, 2005

Constituent	Reference for applicable standard	Maximum compliance schedule allowed	Compliance date and Basis
Cyanide Selenium	NTR	10 years	**April 28, 2010** (10 years from effective date of SIP). Basis is the SIP.
Copper (salt)	CTR	5 years	**May 18, 2010** (this is 10 years from effective date of CTR/SIP). Bases are CTR and SIP.
Cadmium (fresh) Mercury PAH EPA 610	Numeric Basin Plan (BP)	10 years	**April 28, 2010,** which is 10 years from effective date of SIP (April 28, 2000). Basis is the Basin Plan, See note [2a].
Arsenic Cadmium (salt) Chromium (VI) Copper (fresh) Lead Nickel Silver (CMC) Zinc	Numeric BP	10 years	**January 1, 2015.** This is 10 years (using full months) from effective date of 2004 BP amendment (January 5, 2005). Basis is the Basin Plan section 4.3.5.6. See note [2b]. Also, see note [3] for permits issued prior to effective date of 2004 BP amendment.
Dioxins/Furans Tributyltin Other toxic pollutants not in CTR	Narrative BP using SIP methodology	10 years	**10-yr from effective date of permit** (which is when new standard is adopted; no sunset date). Basis is the Basin Plan, see note [2c].
Other priority pollutants on CTR and not listed above	CTR	5 years	**May 18, 2010** (this is 10 years from effective date of CTR/SIP). Basis is the CTR and SIP.

[1] These dates are maximum allowable compliance dates applicable. As required by the Basin Plan, CTR, SIP, and 40CFR122.47, compliance should be as short as possible. These are only applicable for discharges north of the Dumbarton Bridge because applicable criteria for the south bay are different than those cited above.

- For pollutants where there are planned TMDLs or SSOs, and final WQBELs may be affected by those TMDLs and SSOs, maximum timeframes may be appropriate due the uncertain length of time it takes to develop the TMDL/SSO.
- However, for pollutants without planned TMDLs or SSOs, the State Water Board in the EBMUD remand order (WQO 2002-0012), directs the Regional Water Board to establish schedules that are as short as feasible in accordance with requirements.

[2] The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric and narrative water quality objectives specified in the Basin Plan, if the new interpretations result in more stringent limits than in the previous permit.

a. For the numeric objectives in place since the 1995 Basin Plan, due to the adoption of the SIP, the Regional Water Board has newly interpreted these objectives. The effective date of this new interpretation is the effective date of the SIP (April 28, 2000) for implementation of these numeric Basin Plan objectives.

b. For numeric objectives for the seven pollutants adopted in the 2004 Basin Plan (amendments), the Regional Water Board has newly adopted these objectives. The effective date of these new objectives is the approval date of the 2004 Basin Plan by U.S. EPA (January 5, 2005) for implementation of these numeric Basin Plan objectives. December is the last full month directly preceding the sunset date. Compliance should be set on the first day of the month to ease determination of monthly average limits. Therefore, compliance must begin on January 1, 2015.

c. For narrative objectives, the Regional Water Board must newly interpreted these objectives using best professional judgment as defined in the Basin Plan for each permit. Therefore, the effective date of this new interpretation will be the effective date of the permit.

[3] The schedules established in permits effective prior to the 2004 Basin Plan (amendments) should be continued into subsequent permits reissued after the 2004 Basin Plan. For example, Permit XX, adopted Nov 2004 became effective Feb 1, 2005. Permit XX establishes a compliance schedule for copper to end April 1, 2010. When next reissued in 2010, the compliance deadline for the same copper limit should remain April 1, 2010. However, if in applying the 2004 BP objective results in a more stringent limit for copper, then a new compliance schedule may extend to the new date in2015, provided discharger XX justifies the need for the longer compliance schedule.

ATTACHMENT F

Discharger's Feasibility Analysis

(Dated January 24, 2005 and March 18, 2005)

Napa Sanitation District Feasibility Study for NPDES Permit

January 24, 2005

I. INTRODUCTION

This study of the feasibility of achieving compliance with proposed final effluent limits for copper, mercury, selenium and cyanide is being provided to justify interim limits in place of final water-quality-based effluent limits for Napa Sanitation District's (District) NPDES Permit Renewal.

II. BACKGROUND

Basis for Feasibility Studies

The requirement for feasibility studies as a way to document the need for interim effluent limits was first suggested on May 3, 2001, and further defined in a May 11, 2001, meeting between representatives of Bay area permittees, the Regional Water Quality Control Board (RWQCB), the U. S. Environmental Protection Agency (USEPA), and the State Water Resources Control Board (SWRCB). Five Bay area publicly-owned treatment works (POTWs) submitted feasibility studies to the RWQCB in May and had their permits adopted in June, with effluent limits based on those studies.

There are two bases for the feasibility analysis: 1) the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (known as the SIP - May 2000) which establishes statewide policy for NPDES permitting, and 2) the RWQCB's Basin Plan, 1995, as amended. The SIP provides for the situation where an existing NPDES permittee cannot immediately comply with an effluent limitation derived from a California Toxics Rule (CTR) criterion. The SIP allows for the adoption of interim effluent limits and a schedule to achieve compliance with a water quality-based effluent limit in such cases. To qualify for interim limits and a compliance schedule, the permittee must demonstrate that it is infeasible to achieve immediate compliance with the Basin Plan- or CTR-based limit.

The term "infeasible" is defined in the SIP as "not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

The SIP requires that the following information be submitted to the RWQCB to support a finding of infeasibility:

- Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
- Documentation of source control and/or pollution minimization efforts currently underway or completed;

- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment; and
- A demonstration that the proposed schedule is as short as practicable.

The SIP requires that interim numeric effluent limits be based on (a) current treatment facility performance or (b) limits in the existing permit, whichever is more stringent.

The SIP also requires that compliance schedules be limited to specific time periods. For constituents not on the 303(d) List, the maximum length of the compliance schedule is five years from the date of permit issuance. For constituents on the 303(d) list (where a TMDL is required to be prepared), the maximum length of the compliance schedule is up to 20 years from the effective date of the SIP (May 2000). To secure the TMDL-based compliance schedule, the permittee must make commitments to support and expedite development of the associated TMDL.

In similar fashion, when an NPDES permittee cannot immediately comply with an effluent limitation from a Basin Plan criterion, the Basin Plan allows the RWQCB to consider the permittee's proposals for longer compliance schedules where the revised effluent limitation will not be immediately met. The Basin Plan justification for compliance schedules is essentially the same as the SIP procedure. Both procedures require implementation of pollution prevention measures to reduce constituent of concern (COC) loadings to the maximum extent practicable as soon as possible.

Feasibility Study for Napa Sanitation District

It is the District's understanding that they must demonstrate that it is infeasible to meet the effluent limits for copper, mercury, selenium and cyanide in order to be granted a compliance schedule and interim effluent limits in the renewal of their NPDES permit. It is also the District's understanding that the feasibility studies already produced by other permittees were sufficient to prove inability to comply with the proposed final water quality-based effluent limits. Hence, this analysis is generally based on those previous examples.

The RWQCB will determine if a compliance schedule and interim limits are appropriate, based on the permittee's submittal. If the RWQCB agrees that immediate compliance is infeasible, and that all the conditions are met, a compliance schedule and interim limit can be established on a constituent-by-constituent basis. Accordingly, if the RWQCB believes that a compliance schedule and interim limits are not justified by this submittal for one or more of the COCs, the District requests that the RWQCB hold the adoption of the Tentative Order (TO) in abeyance until additional data can be provided to allow full consideration of the District's inability to immediately comply with the subject final water quality-based effluent limits.

III. CONSTITUENTS TO BE EVALUATED

The District will have difficulty complying with the final WQBELs for the following constituents:

- Copper
- Mercury
- Selenium
- Cyanide

Consequently, these constituents are the subjects of this feasibility analysis.

IV. PROPOSED WATER QUALITY-BASED EFFLUENT LIMITS AND CURRENT PLANT PERFORMANCE FOR CONSTITUENTS OF CONCERN

The proposed final limits and the District's effluent quality are summarized in Table 1. Effluent quality in Table 1 is based on data from sampling conducted between September 2001 and April 2004, the same timeframe used for development of the final effluent limits.

Table 1. Final Effluent Limits and Effluent Quality

Constituent	Final Water Quality-Based Effluent Limits (WQBELs)(ug/L)				Proposed Interim Limit	Napa Sanitation District Effluent Quality (MEC[3]) (ug/L)
	Wet Weather		Dry Weather			
	AMEL[1]	MDEL[2]	AMEL[1]	MDEL[2]		
Copper	4.2	8.4	4.2	8.4	21.5	13
Mercury	0.012	0.039	0.012	0.039	0.087	0.15
Selenium	3.3	9.2	3.3	9.2	5	5
Cyanide	2.6	6.7	0.4	1.0	25	20

[1]AMEL= Average Monthly Effluent Limit
[2]MDEL= Maximum Daily Effluent Limit
[3]MEC= Maximum Effluent Concentration observed in the dataset (9/01-4/04)

It is the District's understanding that the water quality-based effluent limits shown in Table 1 were calculated using procedures described in Section 1.4 of the SIP.

FEASIBILITY ANALYSIS

As shown in Table 1, based upon current treatment plant performance as measured using plant effluent, the District is unlikely to be able to immediately comply with proposed final effluent limits for the four COCs. As a result of the District's inability to immediately comply with effluent limits, the District requests that interim effluent limits and a compliance schedule to attempt to meet final limits should be granted in the NPDES permit.

Copper

Treatment plant performance and the District's pollution prevention program targeting copper are discussed below.

District effluent characteristics for copper indicate that immediate compliance with the final effluent limits is not possible. For the period of September 2001-April 2004, the effluent copper concentrations ranged from 1.0 ug/L to 13 ug/L (29 samples). The maximum observed effluent concentration of 13 ug/L would result in permit violations at the proposed dry weather AMEL of 4.2 ug/L and MDEL of 8.4 ug/L. Of the 29 samples, 8, or 28%, exceeded the AMEL and one, or 3.4%, exceeded the MDEL. Therefore, interim effluent limits for copper for both wet and dry weather and a compliance schedule to attempt to meet final copper limits should be granted.

The District's pollution prevention program has included activities with copper sources over the years including vehicle services facilities, household products, and corrosion control.

The District worked with the Association of Bay Area Governments to develop a Green Business Recognition Program for Automotive Service Facilities between 1997 and 1999. The focus of this program encouraged businesses to seal floor drains and to conduct repair activities as dry shops. Inspections revealed that as a result of this program, the majority of vehicle service facilities were operating in the recommended manner. Inspections of several autobody shops in the summer of 2002 revealed that these businesses are also conducting service and repair activities in dry shops with no discharges from these activities to the sanitary sewer. The current focus of the District's pollution prevention (P2) program for vehicle service facilities has, therefore, shifted to vehicle washing activities. Inspections at the autobody shops revealed that vehicle washwater was being disposed of in a variety of ways. Most shops were discharging to the sanitary sewer. The District is working with these shops to ensure that discharges are adequately treated prior to discharge. A few shops were discharging washwater to the storm drain. The District is working with these facilities to redirect their discharges to landscaping or the sanitary sewer.

The District participated in the Bay Area Pollution Prevention Group's (BAPPG) efforts in the mid 1990's to educate the public regarding copper sulfate root control products by participating in the workgroup that developed the brochure. This brochure was distributed by the District at all household hazardous waste collection events prior to the ban on this product. The District also worked with the Napa County Agricultural Commission to educate the public regarding the ban once it was implemented.

In 2001, the District met with the City of Napa to discuss the impacts of the City's water supply on copper levels entering the treatment plant. The City provided information regarding the use of copper sulfate in one of its reservoirs and information on its corrosion control efforts (orthophosphate is added to the source water). In addition, the City provided five years of water supply data for the District's review. The District will continue to analyze this copper source and work with the City as necessary.

Current pollution prevention efforts include revitalizing the District's Commercial Business Program, which will target several commercial categories over the next several years. This program will include information and data gathering, facility visits, and recommendations of Best Management Practices (BMPs) for reducing constituents of

concern. The four commercial categories identified are automotive, restaurants, dental offices, and drycleaners. As noted above, efforts targeting automotive businesses are already underway.

In 2004, the District participated in the BAPPG project to educate plumbers regarding BMPs to reduce copper pipe corrosion by providing information for the presentation. A presentation titled "Copper Corrosion Control" was presented by the BAPPG to the Plumbers Union 343 Apprentices Training Center in Vallejo on March 30, 2004. There were 85 people in attendance. Pre- and Post-tests administered before and after the presentation indicated that the workshop was successful in communicating the connection between piping installation and pollution to San Francisco Bay.

The District is also participating in regional copper-related activities and conducted a copper translator study. The District is participating in the North Bay Copper and Nickel Impairment Assessment to assist in preparation of the 2002 303(d) list. The District is also participating with other permittees through the Bay Area Clean Water Agencies (BACWA) with the RWQCB, USEPA, and BayKeeper in the development of site-specific objectives for copper for San Francisco Bay north of the Dumbarton Bridge. The work has lead to a removal of the 303(d) listing for copper in the Bay and development of revised water quality objectives for copper in the Bay.

Mercury

Treatment plant performance and the District's pollution prevention program targeting mercury are discussed below.

For the period of September 2001-April 2004, the effluent mercury concentrations ranged from 0.0008 ug/L to 0.15 ug/L (38 samples). As was noted previously in the District's 2002 permit amendment: "There is one extreme effluent value (0.15 ug/L) which is 30 times higher than the average effluent concentration for the study period. Board staff examined the data and found that the influent mercury concentration for the same month was also much higher than that of the other months. Therefore, it is concluded that this extremely high effluent concentration was caused by a rare event, and is not representative of the treatment plant's performance." The District believes this rare event (due to sampling and/or analytical variability or a one-time, temporary discharge of mercury into the sewer system) is a basis for throwing out this data point from the dataset. If this were to occur, the District would not have reasonable potential for mercury, and no effluent limits for mercury would be required.

However, if the Regional Board insists on including this data point and giving the District reasonable potential for mercury, then the data point must also be included in the Feasibility Analysis. The observed MEC concentration of 0.15 ug/L would result in permit violations at the proposed AMELs of 0.012 ug/L and MDELs of 0.039 ug/L. Therefore, interim effluent limits for mercury and a compliance schedule to attempt to meet final mercury limits should be granted.

The District's past pollution prevention efforts targeting mercury include a mercury thermometer exchange program. The Napa Sanitation District provided funds for the Napa-Solano County Agencies' joint effort mercury thermometer exchange event, where 300 mercury-free thermometers were exchanged between April 30 and May 11, 2001. The mercury thermometer exchange program was also discussed in an article (Summer 2001) in "Pipeline", a newsletter from the District. The District continues to promote the use of mercury-free thermometers. In 2004, District staff distributed 125 thermometers during a range of public events and plant tours.

The District supports the North Bay Watershed Association Mercury Pollution Prevention Project. In 2004, staff participated in the development of the North Bay Watershed Association Fluorescent Lamp Recycling Pilot Program. Ace hardware store in Napa agreed to participate in this effort.

The District is revitalizing its Commercial Business Program, which will target several commercial categories over the next several years. This program will include information and data gathering, facility visits, and recommendations of Best Management Practices (BMPs) for reducing constituents of concern. The four commercial categories identified are automotive, restaurants, dental offices, and drycleaners. Dental offices are a known source of mercury into the sewer system, and this program will target that source.

In addition to efforts targeting dentists and household products (e.g., thermometers) other activities targeting mercury include:

- Monitoring influent for mercury using clean sampling techniques and analytical techniques using low detection limits
- Contributing to development of the mercury TMDL through membership in Bay Area Clean Water Agencies (BACWA)
- Continuing to participate in the Bay Area Pollution Prevention Group (BAPPG)
- Reviewing white papers, policies and procedures developed by the BAPPG and evaluating feasibility and potential effectiveness of activities for the District
- Monitoring changes in the District's influent and effluent resulting from these efforts, and evaluating next steps

Selenium

Treatment plant performance and the District's pollution prevention program targeting selenium are discussed below.

District effluent characteristics for selenium indicate that immediate compliance with the final effluent limits based on CTR criteria is not possible. For the period of September 2001-April 2004, the effluent selenium concentrations ranged from <0.5 ug/L to 5 ug/L (22 samples). Reasonable potential has been identified based on the concentration in the receiving water. Therefore, interim effluent limits for selenium for both wet and dry weather and a compliance schedule to attempt to meet final selenium limits should be granted.

The District's pollution prevention program has not previously identified selenium as a pollutant of concern and, therefore, has not conducted source control activities targeting selenium sources. Selenium is often found in groundwater drinking water sources. Other possible sources of selenium may include printers and photoprocessors and household products including dandruff shampoos, skin care products and dietary supplements. These sources have not been identified as significant sources by other communities who have evaluated selenium. In addition, selenium has not been detected in the influent in 2003 or 2004 so it is unlikely that source control efforts would be fruitful. Even so the District will continue to monitor for selenium in the influent in an attempt to determine if there are significant influent sources.

Cyanide

Treatment plant performance and the District's pollution prevention program targeting cyanide are discussed below.

District effluent characteristics for cyanide indicate that immediate compliance with the final effluent limits is not possible. Effluent cyanide concentrations during the September 2001 through April 2004 period range from <0.6 ug/L to 20 ug/L (36 samples). The maximum observed effluent concentration of 20 ug/L would result in permit violations at the proposed dry weather AMEL of 0.4 ug/L and MDEL of 1 ug/L. All the samples either exceed the AMEL or are below detection limits. Additionally, the SIP minimum level (ML) for cyanide is 5 ug/L. Ten of the 36 samples exceed the ML. Therefore, interim effluent limits for cyanide for both wet and dry weather and a compliance schedule to attempt to meet final cyanide limits should be granted.

As the Regional Water Board has noted previously, "Cyanide is a regional problem associated with the analytical protocol for cyanide analysis due to matrix inferences. A body of evidence exists to show that cyanide measurements in effluent may be an artifact of the analytical method. This question is being explored in a national research study sponsored by the Water Environment Research Foundation (WERF)." (2002 Napa Sanitation District Permit Amendment)

The District has concerns about the occurrence of artifactual (false positive) cyanide as evidenced by effluent concentrations greater than influent concentrations. The District supports efforts to develop a site-specific objective for cyanide in the Bay, given that cyanide does not persist in the environment and that the current water quality objective (WQO) was based on testing with East Coast species. A cyanide SSO for Puget Sound, Washington, using West Coast species has been approved by EPA Region X. The Permittee is participating in a regional permittee-funded effort to conduct a study for development of site-specific objective. The cyanide study plan was submitted on October 29, 2001. A final report was submitted to the Board on June 29, 2003. The Basin Plan Amendment is currently being developed. The Board intends to include, in a subsequent permit revision, a final limit based on the study results.

A review of cyanide influent data shows that cyanide has rarely been detected in the influent and is rarely present at levels exceeding effluent levels. Therefore, it is unlikely that there are cyanide sources to the District's influent. Instead, cyanide is most likely generated in the treatment process. Therefore, rather than pursuing pollution prevention which would not be effective for cyanide, the District has supported regional cyanide projects. As a member of BACWA, the District is supporting BACWA's efforts to work with the Regional Board to develop a site-specific objective for cyanide. The District has supplied information regarding treatment plant cyanide levels and other requested information to BACWA in support of this effort.

General Pollution Prevention Activities

Other pollution prevention activities and the structure of the District's program are discussed below.

The District conducts ongoing pollution prevention activities that focus on general education rather than targeting specific pollutants. One of the District's most effective programs is its treatment facility tour for school groups. In the 2003/2004 school year, the District conducted 16 tours and reached 512 people through these tours. This program is conducted jointly with the Jameson Canyon Water Treatment Plant and Napa Garbage Service Recycling Facility. This program received a 2004 CWEA Redwood Empire Section Public Education Award.

Other ongoing public education and pollution prevention activities include:

- Recycling/ Household Hazardous Waste Hotline conducted jointly with the City of Napa
- Publication of the quarterly newsletter "Pipeline", which always includes an article about pollution prevention
- Pollution prevention information distributed at Napa Valley College Job Fair
- Support and participation in California Coastal Cleanup Day
- Participation in Napa County Environmental Education Group and the Napa-Solano Regional Environmental Public Education Group
- Support and participation in BAPPG
- Participation in North Bay Source Control Committee
- Distribution of outreach materials at public events. Some materials distributed in 2004 include the BAPPG Clean It Guide and A Kid's Guide to Backyard Bugs.
- Support of Aquatic Outreach Institute's Kids in Creeks Program.

The District's pollution prevention and pretreatment program is staffed with a full-time Pollution Prevention and Source Control Officer, and a half-time Pollution Prevention inspector.

The plan for the Pollution Prevention Program includes a commercial business element, a school outreach element, a public outreach element, and annual reporting and effectiveness measurement. The following activities are planned for 2005:

- Implement commercial business program for dental offices

- Work with Environmental Education Coalition of Napa County to develop Aquatic Outreach to Educators
- Implement commercial business program for dry cleaners
- Conduct integrated pest management education programs as necessary
- Organize an Earth Day or Pollution Prevention Week poster contest for school kids
- Continue programs developed in 2002-2004
- Conduct monitoring of influent selenium and, if selenium is detected above detection limits, conduct source investigations.

Summary

Based upon the above analysis, the District concludes that it is infeasible to meet the final effluent limitations proposed in the permit amendment. Furthermore, it may remain infeasible within a five-year time schedule to meet these limits. As described in this plan, however, the District will continue to conduct its current pollution prevention activities and work to implement planned programs for the future.

Napa Sanitation District Feasibility Study for Tributyltin
NPDES Permit

March 18, 2005

I. INTRODUCTION

This study of the feasibility of achieving compliance with proposed final effluent limits for tributyltin is being provided to justify interim limits in place of final water-quality-based effluent limits for Napa Sanitation District's (District) NPDES Permit Renewal.

II. BACKGROUND

Basis for Feasibility Study

The requirement for feasibility studies as a way to document the need for interim effluent limits was first suggested on May 3, 2001, and further defined in a May 11, 2001, meeting between representatives of Bay area permittees, the Regional Water Quality Control Board (RWQCB), the U. S. Environmental Protection Agency (USEPA), and the State Water Resources Control Board (SWRCB). Five Bay area publicly-owned treatment works (POTWs) submitted feasibility studies to the RWQCB in May and had their permits adopted in June, with effluent limits based on those studies.

There are two bases for the feasibility analysis: 1) the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (known as the SIP - May 2000) which establishes statewide policy for NPDES permitting, and 2) the RWQCB's Basin Plan, 1995, as amended. The SIP provides for the situation where an existing NPDES permittee cannot immediately comply with an effluent limitation derived from a California Toxics Rule (CTR) criterion. The SIP allows for the adoption of interim effluent limits and a schedule to achieve compliance with a water quality-based effluent limit in such cases. To qualify for interim limits and a compliance schedule, the permittee must demonstrate that it is infeasible to achieve immediate compliance with the Basin Plan- or CTR-based limit.

The term "infeasible" is defined in the SIP as "not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

The SIP requires that the following information be submitted to the RWQCB to support a finding of infeasibility:

- Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
- Documentation of source control and/or pollution minimization efforts currently underway or completed;

- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment; and
- A demonstration that the proposed schedule is as short as practicable.

The SIP requires that interim numeric effluent limits be based on (a) current treatment facility performance or (b) limits in the existing permit, whichever is more stringent.

The SIP also requires that compliance schedules be limited to specific time periods. For constituents not on the 303(d) List, the maximum length of the compliance schedule is five years from the date of permit issuance. For constituents on the 303(d) list (where a TMDL is required to be prepared), the maximum length of the compliance schedule is up to 20 years from the effective date of the SIP (May 2000). To secure the TMDL-based compliance schedule, the permittee must make commitments to support and expedite development of the associated TMDL.

In similar fashion, when an NPDES permittee cannot immediately comply with an effluent limitation from a Basin Plan criterion, the Basin Plan allows the RWQCB to consider the permittee's proposals for longer compliance schedules where the revised effluent limitation will not be immediately met. The Basin Plan justification for compliance schedules is essentially the same as the SIP procedure. Both procedures require implementation of pollution prevention measures to reduce constituent of concern (COC) loadings to the maximum extent practicable as soon as possible.

Feasibility Study for Napa Sanitation District Tributyltin

It is the District's understanding that they must demonstrate that it is infeasible to meet the effluent limits for tributyltin in order to be granted a compliance schedule and interim effluent limits in the renewal of their NPDES permit.

The RWQCB will determine if a compliance schedule and interim limits are appropriate, based on the permittee's submittal. If the RWQCB agrees that immediate compliance is infeasible, and that all the conditions are met, a compliance schedule and interim limit can be established on a constituent-by-constituent basis. Accordingly, if the RWQCB believes that a compliance schedule and interim limits are not justified by this submittal, the District requests that the RWQCB hold the adoption of the Tentative Order (TO) in abeyance until additional data can be provided to allow full consideration of the District's inability to immediately comply with the subject final water quality-based effluent limits.

III. CONSTITUENTS TO BE EVALUATED

The District will have difficulty complying with the final WQBELs for tributyltin, Consequently, tributyltin is the subject of this feasibility analysis.

IV. PROPOSED WATER QUALITY-BASED EFFLUENT LIMITS AND CURRENT PLANT PERFORMANCE FOR CONSTITUENTS OF CONCERN

The proposed final limits and the District's effluent quality are summarized in Table 1. Effluent quality in Table 1 is based on data from sampling conducted between September 2001 and February 2004, the same time frame used for development of the final effluent limits.

Table 1. Final Effluent Limits and Effluent Quality

Constituent	Final Water Quality-Based Effluent Limits (WQBELs)(ug/L)				Proposed Interim Limit	Napa Sanitation District Effluent Quality (MEC[3]) (ug/L)
	Wet Weather		Dry Weather			
	AMEL[1]	MDEL[2]	AMEL[1]	MDEL[2]		
Tributyltin	0.05	0.1	0.006	0.012		0.0226

[1]AMEL= Average Monthly Effluent Limit

[2]MDEL= Maximum Daily Effluent Limit

[3]MEC= Maximum Effluent Concentration observed in the dataset (9/01-2/04)

It is the District's understanding that the water quality-based effluent limits shown in Table 1 were calculated using procedures described in Section 1.4 of the SIP.

FEASIBILITY ANALYSIS

As shown in Table 1, based upon current treatment plant performance as measured using plant effluent, the District is unlikely to be able to immediately comply with proposed dry weather final effluent limits for tributyltin. As a result of the District's inability to immediately comply with effluent limits, the District requests that interim effluent limits and a compliance schedule to attempt to meet final limits should be granted in the NPDES permit.

Treatment plant performance and the District's pollution prevention program targeting tributyltin are discussed below.

District effluent characteristics for tributyltin indicate that immediate compliance with the final effluent limits is not possible. For the period of September 2001-February 2004, the effluent tributyltin concentrations ranged from undetected at a method detection limit of 0.00051 ug/L to a detected value of 0.0226 ug/L (8 samples). The maximum observed effluent concentration of 0.0226 ug/L would result in permit violations of the proposed dry weather AMEL of 0.006 ug/L and MDEL of 0.012 ug/L. Of the 8 samples, one concentration, or 13%, exceeded the dry weather AMEL and the MDEL. Therefore, interim effluent limits for tributyltin for dry weather and a compliance schedule to attempt to meet final dry weather tributyltin limits should be granted.

Tributyltin is a biocide that has been used to kill aquatic organisms in cooling water systems, antifouling marine paints and stains, protective wood treatments, disinfectant commercial toilet bowl cleaners, and disinfectant carpet and upholstery cleaners. Tributyltin compounds are contained in chemicals registered in California for use in antifoulant paints on boats, ships, and marine structures, as wood preservatives, molluscicides, and disinfectants, and as biocides for use in cooling towers, pulp and paper mills, and textile mills. Federal legislation was enacted to limit the use of tributyltin-based antifouling paints to large boats only (Organotin Antifouling Paint Control Act of 1988). Tributyltin from boats and docks would not contribute to the treatment plant load. Tributyltin in stormwater runoff from wood preservatives on outdoor wooden structures would not contribute to the treatment plant load, as the District is not a combined stormwater and sewer system.

Studies performed to determine the sources of tributyltin in urban areas concluded that cooling tower additives were the largest contributor of tributyltin to treatment plants (CEPA 1995). The State of California has prohibited the possession, use, and sale of cooling water additives containing tributyltin in the San Francisco Bay Area (DPR, 1996b). The State Department of Pesticide Regulation has notified manufacturers and major distributors of this prohibition and they are legally liable for selling these products in the nine San Francisco Bay area counties (San Francisco, Santa Clara, San Mateo, Alameda, Contra Costa, Solano, Napa, Marin, and Sonoma). Cooling water system owners and operators are also legally liable for using banned product. Tributyltin-containing additives are a hazardous waste and must be disposed of as such. (http://www.sanjoseca.gov/esd/PDFs/clngtowr.pdf)

Potential sources of tributyltin to the District's treatment plant include illegal cooling tower additive use and discharge from residential areas, hospitals or other institutions where tributyltin is used in toilet bowl cleaners, disinfectant and antimicrobial cleaners, and antibacterial carpet and upholstery shampoos. Central Contra Costa Sanitary District has developed an informational fact sheet about tributyltin designed to educate residents about household products containing tributyltin and how to avoid them.

The District's pollution prevention program has not targeted activities for controlling tributyltin sources in the past because tributyltin has not been previously identified as a pollutant of concern. Future pollution prevention activities are listed in Table 2, and include a source identification study and outreach. Brochures similar to the fact sheet developed by Central Contra Costa Sanitary District could be distributed to residents and at hospitals.

Table 2. Pollution Prevention Schedule

Pollution Prevention Activity	Completion Date
Source identification, including evaluation of medical facilities and businesses with cooling towers.	December 2005
Outreach to educate medical facilities and Significant Industrial Users about alternatives to tributyltin-containing products.	December 2006
Outreach to other potential sources discovered through the source identification.	December 2007

Summary

Based upon the above analysis, the District concludes that it is infeasible to meet the final dry weather effluent limitations for tributyltin proposed in the permit amendment. Furthermore, as the main source of tributyltin to the treatment plant has already been made illegal, it may remain infeasible to meet these limits within a five-year time schedule. However, the District will develop pollution prevention activities to implement as described in this plan.

ATTACHMENT G

State Water Board Technical Report

TECHNICAL REPORT
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER QUALITY

PETITIONS OF NAPA SANITATION DISTRICT, BAY AREA DISCHARGERS ASSOCIATION, AND SAN FRANCISCO BAYKEEPER FOR REVIEW OF WASTE DISCHARGE REQUIREMENTS ORDER NO. 00-059 (NPDES NO. CA0037575) FOR NAPA SANITATION DISTRICT, SAN FRANCISCO BAY REGION

The State Water Resources Control Board's (State Board) Office of Chief Counsel (OCC) requested that the Division of Water Quality perform a technical review of particular issues regarding the subject petitions. This technical review was limited to the administrative record and technical information which is readily available to staff and the general public.

BACKGROUND

The San Francisco Bay Regional Water Quality Control Board (Regional Board) adopted Waste Discharge Requirements Order No. 00-059 on July 19, 2000, authorizing Napa Sanitation District (District) to discharge wastewater to the Napa River from the Soscol Water Recycling Facility (facility). The Waste Discharge Requirements are National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037575 (permit). The discharge was previously regulated by Waste Discharge Requirements in Order No. 94-037.

The point of discharge is near the Mile 10 marker of the Napa River, measured by run of the river upstream of the Highway 37 bridge. Below the bridge, the Napa River traverses Mare Island Strait for approximately four miles before flowing into the east side of San Pablo Bay. Tidally influenced marshland and mudflats exist in broad wetland areas downstream of the discharge. A map of the discharge is attached. The map shows that some additional marshland and a tide gate exists upstream of the discharge.

The facility treats wastewater from the City of Napa and adjacent unincorporated areas, serving a population of about 70,000 people, and wastewater from the City of American Canyon, serving a population of about 8,000 people (based on the application for the permit). At the time the permit was adopted, the facility used a secondary and tertiary biological physical chemical treatment process having a dry weather design capacity of 15.4 million gallons per day (mgd). The facility consisted of four waste stabilization ponds in a series (totaling 340 acres), followed by the addition of polymer coagulants, sedimentation, filtration, chlorination, and dechlorination. An expansion to the facility using an activated sludge process was under construction at the time of permit issuance. The expansion was due to be completed in March 2001; therefore, it is assumed to be on line at this time. The permit application is unclear in defining the design flows of the expansion project. However, a 1993 expansion report (in Tab 7D of the administrative record) indicates the expansion would be designed for 11.8 mgd average flow, supplemented by

5 mgd of wastewater from the stabilization ponds, totaling 16.8 mgd average flow to be discharged to the Napa River. Maximum daily discharge during the wet season was not firmly defined in the expansion report. However, the chlorination capacity for discharge to the river will be 17.5 mgd average daily flow for peak wet weather months. In recent history of the discharge from 1997 through 1999 (see fact sheet page 25), the maximum monthly discharge to the Napa River was 22.29 mgd (February 1998).

By January 2002, permit findings indicate that the City of American Canyon will have completed its own wastewater treatment facility and would no longer discharge its wastewater to the District's facility. Permit requirements for interim mass limitations have been developed in anticipation of that change.

During the dry season from May 1 to October 31, discharge is prohibited except when emergency discharges are authorized by the Executive Officer of the Regional Board. During the dry season wastewater is either stored in the stabilization ponds or treated and beneficially reclaimed for irrigation. During the wet season from November 1 to April 30, discharge to the Napa River is authorized. During the wet season wastewater stored in the stabilization ponds is either blended with wastewater treated by the expansion facility for discharge to the Napa River, or it is reclaimed for irrigation. However, the stabilization ponds can be used to temporarily store peak wet weather inflow that exceeds capacity of the expansion facility. The permit authorizes discharge during the wet season with effluent limitations based on a minimum initial dilution of 10:1 for treated effluent. Emergency discharges during the dry season are permitted with effluent limitations assuming no available dilution.

The Napa River is on the Clean Water Act (CWA) Section 303(d) list and is identified with impairments due to nutrients, pathogens, and sedimentation/siltation. The Napa River is not listed as impaired by any pollutant of significant issue in the subject petitions. San Pablo Bay is 303(d)-listed for chlordane, copper, DDT, diazinon, dieldrin, 17 congeners of dioxin/furan compounds, exotic species, mercury, nickel, PCBs, PCBs (dioxin like), and selenium.

TECHNICAL ISSUES

In requesting assistance for analysis of concerns raised by petitioners, OCC has identified technical issues for review in the following areas:

District and Bay Area Dischargers Association Petitions

1. Mercury and dioxin interim mass limits
2. Interim, concentration-based copper limits
3. Interim, concentration-based mercury limits
4. Interim, concentration-based cyanide limit
5. Percent removal of BOD and TSS
6. Year-round sampling requirement

San Francisco BayKeeper petition

7. Reduced mass limits to offset American Canyon treatment plant flows
8. Reasonable potential for diazinon and selenium

BASIC REASONABLE POTENTIAL ANALYSIS

In order to address more detailed technical issues, it is beneficial to first address "reasonable potential" for pollutants in a straightforward manner. Five specific pollutants have been reviewed in this report to determine if the District's discharge may be at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard. The pollutants reviewed are mercury, 2,3,7,8-TCDD (dioxin), copper, cyanide, and selenium. This report has reviewed such "reasonable potential analysis" by methods described in the State Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Policy). The Policy's method for reasonable potential analysis relies on applicable criteria from the California Toxics Rule (CTR), the National Toxics Rule (NTR), and water quality objectives from the Water Quality Control Plan for the San Francisco Bay Basin, June 21, 1995 (Basin Plan). The CTR at times makes references to the Regional Board's Basin Plan of 1986 (1986 Basin Plan).

Neither raw laboratory data nor Annual Reports from the self-monitoring program was included in the administrative record. However, monitoring data is presented on analysis sheets throughout the administrative record, and they have been relied on in this analysis as being accurate unless inconsistencies have been noted to exist. In certain instances described herein, clarification of actual values from raw laboratory data is desirable. Data that is readily available to staff and the public from the internet has also been used, including data from the Regional Monitoring Program (RMP) from the San Francisco Estuary Institute and gage station information for the Napa River by the U.S. Geological Survey (USGS). The initial steps in reviewing the reasonable potential determinations made by the Regional Board are based on a review of beneficial uses of the receiving waters and selection of applicable criteria and objectives that protect such beneficial uses. Selection of applicable aquatic life criteria is based on determinations made from salinity data and for certain metals, ambient hardness data.

Beneficial Uses of the Receiving Waters:

The Basin Plan identifies the Napa River on Figure 2-8 within the San Pablo Basin. The lower portions of streams, such as the Napa River, are estuarine waters and as such are considered part of the San Francisco Bay Estuary (see Basin Plan p. 2-5). A significant sub-watershed boundary appearing on Figure 2-8 corresponds well with the "General Locations of Wetlands" shown on Figure 2-11 of the Basin Plan. The District's discharge to the Napa River is within the upper reaches of the wetlands identified by these figures. Table 2-6, associated with Figure 2-8, identifies existing beneficial uses of the Napa River as: agricultural supply (AGR), cold freshwater habitat (COLD), fish migration (MIGR), municipal and domestic supply (MUN), navigation (NAV), preservation of rare and endangered species (RARE), water contact

recreation (REC-1), non-contact water recreation (REC-2), fish spawning (SPWN), warm freshwater habitat (WARM), and wildlife habitat (WILD). Finding 23 of the permit identified all of the above beneficial uses as applicable to the receiving water, with the exception of the MUN designation. This reasonable potential analysis, therefore, considers criteria promulgated by the United States Environmental Protection Agency (U.S. EPA) in the CTR that are protective of human health for the consumption of organisms only (rather than consumption of water and organisms).

Salinity Delineation for Aquatic Life Criteria and Objectives

The CTR (and NTR under similar applicable regulations) delineates applicability of freshwater or saltwater aquatic life criteria in the matrix of 40 CFR 131.38(b)(1), hereafter referenced as the "CTR table". The salinity delineation for criteria in the matrix of the CTR table is prescribed by 40 CFR 131.38(c)(3). For waters in which the salinity is equal to or less than 1 part per thousand (ppt) 95% or more of the time, the applicable criteria are the freshwater criteria in Column B of the CTR table. For waters in which the salinity is equal to or greater than 10 ppt 95 percent of the time, the applicable criteria are the saltwater criteria in Column C, except for selenium in the San Francisco Bay Estuary where the applicable criteria are the freshwater criteria in Column B. For waters in which the salinity is between 1 and 10 ppt, the applicable criteria are the more stringent of the freshwater or saltwater criteria.

The Basin Plan delineates applicability of freshwater or saltwater (marine) water quality objectives for the protection of aquatic life under a different threshold. Since Basin Plan objectives are not "criteria in the matrix" of the CTR table, the CTR's salinity delineation does not apply to the selection of applicable Basin Plan objectives. By the Basin Plan, freshwater effluent limitations shall apply to discharges to waters both outside the zone of tidal influence and with salinity lower than 5 ppt at least 75 percent of the time in a normal water year. Marine effluent limitations shall apply to discharges to waters with salinity greater than 5 ppt at least 75 percent of the time in a normal water year. For discharges to waters with salinity in between these two categories or to tidally influenced fresh waters that support estuarine beneficial uses, effluent limitations shall be the lower of the marine or freshwater effluent limitation, based on ambient hardness, for each substance.

The salinity estimates in the following tables were presented in a draft assessment of fresh and marine water effluent limitations found in Tab 6C of the administrative record. The source of the information was from salinity estimates by Larry Walker Associates (LWA) taken at the location of the discharge and from the RMP taken at the Napa River Station BD-50 within Mare Island Strait.

LWA RESULTS		RMP RESULTS	
DATE	**SALINITY (ppt)**	**DATE**	**SALINITY (ppt)**
Jan-98	0.1686	2/13/96	1.8
Feb-98	0.1434	4/23/96	3.78
Mar-98	0.2292	7/24/96	12.12
Apr-98	0.177	1/28/97	0.00096
May-98	0.2718	4/22/97	0.135
Jun-98	1.782	8/5/97	0.156
Nov-98	10.908	2/3/98	1.002
Dec-98	0.5832	4/15/98	1.662
Jan-99	2.916	7/28/98	7.86
Feb-99	0.3552		
Apr-99	0.258		

The following analysis describes the percent of time that a salinity estimate was above or below the referenced salinity threshold based on sampling events. The wet season of discharge is from November 1 through April 30.

Threshold	**Reference**	**LWA RESULTS**		**RMP RESULTS**	
		ALL YEAR (11 SAMPLES)	**WET SEASON (9 SAMPLES)**	**ALL YEAR (9 SAMPLES)**	**WET SEASON (6 SAMPLES)**
<1 ppt	CTR	73%	78%	33%	33%
<5 ppt	Basin Plan	91%	89%	78%	100%
>5 ppt	Basin Plan	9%	11%	22%	0%
>10 ppt	CTR	9%	11%	11%	0%

The salinity data was not greater than 10 ppt or less than 1 ppt more than 95 percent of the time regardless of sampling location. Therefore, to the extent that CTR aquatic life criteria apply, the more stringent of freshwater or saltwater criteria apply from Columns B or C of the CTR table.

The salinity data was less than 5 ppt more than 75 percent of the time at both sampling locations. Based upon the Basin Plan salinity threshold, freshwater objectives would be the regulatory basis for permitting. The sampling events taken by LWA included three wet season months from 1999 (January, February, and April) and did not include four dry season months from 1998 (July, August, September, and October). Sampling events taken for the RMP were performed in six wet season months and three dry season months. Additional information in the Regional Board's draft analysis indicated that many of the sampling events were taken in wetter than normal precipitation conditions, yielding results that were inconclusive. The receiving water is tidally influenced, and it supports estuarine beneficial uses. Therefore, to the extent that Basin Plan aquatic life objectives from Tables 3-3 and 3-4 apply, effluent limitations are more appropriately developed from the more stringent of the marine or freshwater objectives.

Applicable Criteria for Mercury

The CTR has reserved promulgation of aquatic life criteria for mercury in the CTR with an exception by footnote "b" to the CTR table. Footnote "b" indicates that Tables III-2A and III-2B of the 1986 Basin Plan continue to apply to waters subject to them. Tables III-2A and III-2B are applied for the protection of aquatic life on the basis of location of the receiving waters, either downstream of Carquinez Strait (Table III-2A) or upstream of San Pablo Bay (Table III-2B), without particular consideration to salinity characteristics. Water quality objectives in Table III-2A are based on U.S. EPA Ambient Water Quality Criteria for saltwater with qualification that U.S. EPA freshwater criteria can be applied seasonally, where appropriate. Water quality objectives in Table III-2B are based on U.S. EPA Ambient Water Quality Criteria for freshwater. The Napa River is an estuarine surface water upstream of San Pablo Bay. Accordingly, Table III-2B objectives are applicable by reference from footnote "b" of the CTR table. Table III-2B cites an objective of 0.025 ug/l as a 4-day average and 2.4 ug/l as a 1-hour average. The objective of 0.025 ug/l is the most stringent of these two objectives and it is footnoted with additional information (footnote "j") describing that U.S. EPA's criteria for mercury is 0.012 ug/l which is below the level of detection of 0.025 ug/l. The footnote further describes that an objective of 0.012 ug/l is desirable, but attainment can only be determined at the level of detection. Finding 45.a of the permit provides additional information that the freshwater criterion of 0.012 ug/l is referenced by U.S. EPA's Ambient Water Quality Criteria (Gold Book). The final residual value of 0.012 ug/l is derived from a bioconcentration factor of 81,700 for methyl-mercury with the fathead minnow assuming that essentially all discharged mercury is methyl-mercury. The saltwater criterion of 0.025 ug/l was similarly derived using the bioconcentration factor of 40,000 obtained for methyl-mercury with the Eastern oyster. Accordingly, 0.012 ug/l is a "desirable'' objective, but 0.025 ug/l is the most stringent applicable objective from Table III-2B.

Basin Plan Tables 3-3 and 3-4 reflect the same water quality objectives as Tables III-2A and III-2B, respectively, of the 1986 Basin Plan. In the Basin Plan, salinity delineation is made based on the 5 ppt threshold. Basin Plan Tables 3-3 and 3-4 both cite a similar most stringent objective of 0.025 ug/l as a 4-day average. Tables 3-3 and 3-4 also cite 1-hour average objectives of 2.1 ug/l and 2.4 ug/l, respectively, for saltwater and freshwater. The 0.025 ug/l objective from Table 3-4 is footnoted (footnote "i") exactly the same as the objective from Table III-2B, referencing 0.012 ug/l as a desirable objective. However, 0.025 ug/l is the most stringent applicable objective from Tables 3-3 and 3-4 of the Basin Plan.

The most stringent applicable water quality objective for mercury is 0.025 ug/l as a 4-day average for purposes of reasonable potential analysis under the Policy. However, 0.012 ug/l as a desirable objective may be reviewed with other information to determine if a water quality-based effluent limitation is required to protect beneficial uses.

Applicable Criteria for 2,3,7,8-TCDD (Dioxin)

The CTR table cites an applicable criterion of 1.4 EE-08 ug/l for 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) from Column D2 for the protection of human health based on the consumption of organisms only. Column D2 criteria is applicable on the basis of 40 CFR 131.38(d)(2)(ii) for enclosed bays and estuaries that are waters of the United States that do not include the MUN designation. Neither the CTR nor Basin Plan cites water quality criteria or objectives for the protection of aquatic life for 2,3,7,8-TCDD. There are no water quality criteria or objectives for the 16 other congeners of 2,3,7,8-TCDD and 2,3,7,8-TCDF described in section 3 of the Policy. Nor has the State or Regional Board adopted methodology to regulate those congeners by means of Toxic Equivalency Factors (TEFs) for inland surface waters or enclosed bays and estuaries. They are regulated in the Ocean Plan using the TEF approach. At this time, the Policy requires that monitoring and reporting requirements shall be implemented for the 16 other congeners, including reporting in terms of TEFs.

Applicable Criteria for Copper

The CTR has promulgated aquatic life criteria for dissolved copper in freshwater and saltwater with an exception by footnote "b" to the CTR table. The copper aquatic life objectives in Table III-2B are based on U.S. EPA 1984 Ambient Water Quality Criteria for freshwater. Table III-2B objectives are 6.5 ug/l (4-day average) and 9.2 ug/l (1-hour average) of total recoverable copper.

The saltwater criteria from the CTR table, Column C are 3.1 ug/l (4-day average) and 4.8 ug/l (short period average) as dissolved copper. These saltwater criteria can be translated for comparison purposes to 3.7 ug/l and 5.8 ug/l, respectively, as total recoverable copper after applying a conversion factor of 0.83 from Table 2 to 40 CFR 131.38(b)(2). These CTR values were developed from studies in New York Harbor and San Francisco Bay (see CTR Preamble, section F.(d.), FR31691). There is no evidence in the record indicating that a translator or site-specific objective (e.g., water effect ratio) has been developed for the Napa River at the discharge.

Basin Plan Table 3-4 freshwater objectives specify the same objectives as Table III-2B, based on a hardness of 50 mg/l as calcium carbonate referenced in footnote "g" to Table 3-4.
The administrative record does not include information on the hardness of the Napa River. However, USGS station information (readily available from the Internet) for the Napa River at Oak Knoll Road (11 miles upstream) indicates that of 99 samples taken from 1970 to 1985, only three samples were slightly below 50 mg/l hardness. The Napa River should be expected to be of even higher hardness in the estuarine area of the discharge. Accordingly, 50 mg/l is an appropriate lower threshold of hardness, yielding Basin Plan objectives no more stringent than Table III-2B from the 1986 Basin Plan. Basin Plan Table 3-3 references footnote "f" which mentions a U.S. EPA criterion of 2.9 ug/l as a 1-hour average and the development of 4.9 ug/l as a site-specific objective, then under review by U.S. EPA. Footnote "f" does not indicate that the U.S. EPA criterion of 2.9 ug/l or site-specific objective of 4.9 ug/l is applicable. Therefore, no saltwater objectives are applicable from Basin Plan Table 3-3.

Basin Plan Table 3-6 specifies objectives for the protection of agricultural uses beginning at a threshold of 200 ug/l to limits of 500 ug/l for livestock and an upper limit of 5,000 ug/l.

The most stringent criteria or objectives for copper are saltwater criteria from the CTR table, Column C. Accordingly, 3.1 ug/l as a 4-day average of dissolved copper (or 3.7 ug/l as a 4-day average of total recoverable copper) is the most stringent applicable criterion for purposes of reasonable potential analysis under the Policy.

Applicable Criteria for Cyanide

The CTR has promulgated aquatic life criteria for cyanide in freshwater and saltwater with an exception by footnote "b" to the CTR table. The cyanide criteria in Table III-2B are based on U.S. EPA 1984 Ambient Water Quality Criteria for freshwater. Table III-2B objectives are 5.2 ug/l (4-day average) and 22 ug/l (1-hour average) of cyanide.

The freshwater criteria from the CTR table, Column B for cyanide are 5.2 ug/l (4-day average) and 22 ug/l (short period average). These criteria were promulgated in the NTR for certain water bodies including the San Francisco Bay estuary.

The saltwater criteria from the CTR table Column C for cyanide are 1 ug/l (both as a 4-day average and short period average). These criteria were promulgated in the NTR for certain water bodies including the San Francisco Bay estuary.

Basin Plan objectives from Table 3-4 for cyanide reflect the 1986 Basin Plan objectives from Table III-2B of 5.2 ug/l (4-day average) and 22 ug/l (1-hour average). A Basin Plan objective from Table 3-3 is more stringent than Table 3-4 at 5.0 ug/l (1-hour average).

The most stringent applicable water quality criteria for cyanide are 1 ug/l (4-day average and short period average) for purposes of reasonable potential analysis under the Policy.

Applicable Criteria for Selenium

The CTR has promulgated aquatic life criteria for selenium in freshwater and saltwater with an exception by footnote "b" to the CTR table. Table III-2B references footnote "g" which mentions that U.S. EPA was expected to promulgate final selenium criteria and that the Regional Board recommended that the State Board should develop criteria for the Bay/Delta estuary that account for bioacclumulation. Footnote "g" does not reference any applicable criteria for selenium. Therefore, no objectives are applicable from Basin Plan Table III-2B.

With respect to freshwater or saltwater aquatic life criteria from the CTR table, 40 CFR 131.38(c)(3)(ii) requires that Column B freshwater criteria for selenium apply to the San Francisco Bay Estuary. Accordingly, footnote "q" indicates that a criterion of 5 ug/l (4-day average) as total recoverable selenium was promulgated for specific waters by the NTR, including San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San

Joaquin Delta. Additionally, footnote "p" indicates that a criterion of 20 ug/l (short period average) as total recoverable selenium was promulgated for specific waters by the NTR, including these same waters of San Francisco Bay. The Estuary is considered here to be included in U.S. EPA's reference to waters of San Francisco Bay because footnote "r" provides such clarification to a similar referral of cyanide criteria that were promulgated by the NTR.

With respect to criteria that are protective of human health for the consumption of organisms, footnote "n" in Column D2 of the CTR table states that U.S. EPA is not promulgating human health criteria for selenium. Instead, footnote "n" recommends that selenium should be addressed in permit actions using the State's existing narrative criteria for toxic pollutants.

Basin Plan Table 3-6 specifies objectives for the protection of agricultural uses ranging from a limit of 20 ug/l to an upper limit of 50 ug/l based on livestock use.

The most stringent applicable water quality objective for selenium is 5 ug/l (4-day average) for purposes of reasonable potential analysis under the Policy.

General Reasonable Potential Analysis

The Policy is used to determine reasonable potential generally by two mathematical tests using applicable criteria/objectives and by consideration of other factors. In the first of two tests, the maximum effluent concentration (MEC) is compared to applicable criteria/objectives. In this test, appropriate adjustments are made to compare the MEC to criteria/objectives in like form (i.e., total recoverable or dissolved metal). If the MEC equals or exceeds the criteria/objectives, reasonable potential is established by this first test. In the second test, the ambient background concentration (B) is compared to applicable criteria/objectives. Similar to the first test, appropriate adjustments are made to make comparisons in like form (i.e., total recoverable or dissolved metal). If B equals or exceeds the criteria/objectives, reasonable potential is established by this second test. In the case of this permit, no ambient background data was available to perform analysis under this second test at the time of permit issuance. The provision to reopen the permit (Provision 22) is appropriate if reasonable potential is established after ambient background data becomes available to complete this aspect of the analysis. Discussions regarding the basic reasonable potential analysis of the first test follow for mercury, 2,3,7,8-TCDD, copper, cyanide, and selenium.

A third more discretionary test establishes reasonable potential if other information is available to determine that a water quality-based effluent limitation is required to protect beneficial uses. Information that may be used includes: the facility type, discharge type, solids loading analysis, lack of dilution, history of compliance problems, potential toxic impact of discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA Section 303(d) listing for the pollutant, the presence of endangered or threatened species or critical habitat, and other information.

Basic Reasonable Potential Analysis for Mercury

The most stringent applicable water quality objective for mercury is 0.025 ug/l as a 4-day average. However, 0.012 ug/l is a desirable objective, and it may be reviewed with other information to determine if a water quality-based effluent limitation is required to protect beneficial uses. This objective is from the Basin Plan Tables 3-3 and 3-4 and is referenced by the CTR to Table III-2B of the 1986 Basin Plan.

The MEC for mercury is 0.01 ug/l using Policy methodology based on data in the fact sheet (page 26 of 44). This MEC is established by only one sample with a detectable concentration out of 21 total samples taken from January 1997 through December 1999. The other samples having no detectable concentrations range from <0.01 to <0.1 ug/l. The upper range is questionable because it conflicts with other values from draft data sheets in Tab 6B of the administrative record for December 1997. This is of inconsequence for reasonable potential analysis, which relies on the sample with a detected concentration, but is significant to the development of interim mass limits to be further discussed.

No conversion factors are applicable from 40 CFR 131.38(b)(2) for mercury. The mercury MEC is compared in the total recoverable form to the most stringent applicable criteria/objective. Accordingly, under the first test for reasonable potential, the MEC of 0.01 ug/l is less than the applicable objective of 0.025 ug/l. Likewise, the MEC of 0.01 ug/l is less than a desirable objective of 0.012 ug/l. Accordingly, the first test has not established reasonable potential for mercury. The second test cannot be evaluated until ambient background concentration data is obtained. Efforts should be underway by the Regional Board to require dischargers to collect appropriate data as required by the Policy.

Basic Reasonable Potential Analysis for 2,3,7,8-TCDD

The applicable criterion for reasonable potential analysis of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) is 1.4 EE-08 ug/l from column D2 of the CTR table for the protection of human health (based on the consumption of organisms only).

Determination of the MEC for 2,3,7,8-TCDD may require confirmation of applicable monitoring data because there is conflicting data within the administrative record. The fact sheet for the permit (page 30 of 44) displays six values for 2,3,7,8-TCDD for March and December in each of the years 1997 through 1999. The fact sheet information should reflect Annual Reports (which were not submitted with the administrative record). The MEC for 2,3,7,8-TCDD is 2.6 EE-06 ug/l based on the fact sheet data. This is one of two samples shown with a detectable concentration out of six total samples. The other samples having no detectable concentrations range from <1.9 EE-06 to <2.6 EE-06 ug/l. If the fact sheet accurately reflects Annual Reports and data reported by the laboratory, the MEC of 2.6 EE-06 ug/l is greater than the applicable criterion of 1.4 EE-08 ug/l. Accordingly, the first test of the Policy would establish reasonable potential for 2,3,7,8-TCDD if the fact sheet data is accurate.

However, a memorandum from the District to the Regional Board dated March 27, 2000 (located in Tab 6A of the administrative record) transmitted sample data for 2,3,7,8-TCDD and TCDD equivalents. The sample data in the memorandum differs entirely from all six values shown in the fact sheet. The memorandum states that the results are submitted "exactly as the commercial laboratory reported to the District". Since these results are apparently based on a special inquiry of the facts to clarify the data, they seem to be the applicable effluent data for reasonable potential analysis. All six samples on the memorandum are reported without detectable concentrations, ranging from <1.2 to <4.1 pg/l. By the Policy, the MEC would be the lowest of those values, equal to 1.2 pg/l (1.2 EE-06 ug/l). On this basis, since 2,3,7,8-TCDD was not detected in any of the effluent samples and all of the reported detection limits are greater than the applicable criterion of 1.4 EE-08 ug/l, reasonable potential is not established by the first test in the Policy. The second test cannot be evaluated until ambient background concentration data is obtained. If analysis for the second test eventually establishes reasonable potential, water quality-based effluent limitations will be required. However, at this time the results of the analysis for the first test require the Regional Board to establish interim requirements in accordance with section 2.2.2 of the Policy, which requires additional monitoring for 2,3,7,8-TCDD in place of a water quality-based effluent limitation. Section 1.3 of the Policy requires this when all reported detection limits of the pollutant in the effluent are greater than the most stringent applicable criterion/objective.

Basic Reasonable Potential Analysis for Copper

The most stringent applicable criteria for reasonable potential analysis of copper is 3.1 ug/l as dissolved copper or 3.7 ug/l as total recoverable copper after applying the appropriate conversion factor. This applicable criterion is from Column C2 of the CTR table for protection of aquatic life in saltwater.

The MEC for total recoverable copper is 5 ug/l using Policy methodology based on data in the fact sheet (page 26 of 44). The record does not indicate that any metals were monitored in the dissolved form. This value is from one of only two samples with a detectable concentration out of 21 total samples from January 1997 through December 1999. The other samples having no detectable concentrations range from <2 to <4 ug/l. However, it is important to note that there are differences between data displayed on the fact sheet for December 1997 and January 1998 and other data sheets in Tab 6B of the administrative record. One of the data sheets in Tab 6B (marked H://NSD/RPA/Sheet1 Metals) shows all values for copper without detectable concentrations. If that data sheet is correct, the MEC would be the lowest detection limit, or 2 ug/l, and the first test would not establish reasonable potential. However, the assumption used here is that the fact sheet is accurate and that the January 1998 sample was 5 ug/l as a detectable concentration of total recoverable copper to establish the MEC.

The Policy requires that the MEC in total recoverable form be adjusted to dissolved form and then compared to dissolved criteria. A mathematically equivalent method is to compare the MEC in total recoverable form with applicable criteria adjusted to the total recoverable form by the appropriate conversion factor from 40 CFR 131.38(b)(2). In this case, the MEC of 5 ug/l total recoverable copper is greater than the most stringent applicable criteria of 3.7 ug/l as total

recoverable copper. Accordingly, the first test establishes reasonable potential for copper and water quality-based effluent limitations must be developed.

Basic Reasonable Potential Analysis for Cyanide

The most stringent applicable water quality criteria for reasonable potential analysis of cyanide are 1 ug/l as both a 4-day average and short period average. This applicable criteria is from Column C of the CTR table for protection of aquatic life in saltwater and was promulgated in the NTR for certain water bodies including the San Francisco Bay estuary.

The MEC for cyanide is 2 ug/l using Policy methodology based on data in the fact sheet (page 28 of 44). All samples for cyanide have no detectable concentrations, ranging from <2 to <3.4 ug/l. The MEC of 2 ug/l is greater than the applicable criteria of 1 ug/l. Since cyanide was not detected in any of the effluent samples and all of the reported detection limits are greater than the applicable criterion of 1 ug/l, reasonable potential is not established by the first test in the Policy. The second test cannot be evaluated until ambient background concentration data is obtained. If analysis for the second test eventually establishes reasonable potential, water quality-based effluent limitations will be required. However, at this time the results of the analysis for the first test require the Regional Board to establish interim requirements in accordance with section 2.2.2 of the Policy, which requires additional monitoring for cyanide in place of a water quality-based effluent limitation. Section 1.3 of the Policy requires this when all reported detection limits of the pollutant in the effluent are greater than the most stringent applicable criterion/objective.

Basic Reasonable Potential Analysis for Selenium

The most stringent applicable water quality criterion for reasonable potential analysis of selenium is 5 ug/l as a 4-day average. This applicable criterion is from Column B2 of the CTR table for protection of aquatic life in freshwater and was promulgated in the NTR for certain water bodies including the San Francisco Bay estuary.

The MEC for selenium is 1 ug/l using Policy methodology based on data in the fact sheet (page 28 of 44). All samples for selenium in the effluent had no detectable concentrations, ranging from <1 to <1.2 ug/l. No conversion factors are applicable from 40 CFR 131.38(b)(2) for selenium freshwater criteria. The selenium MEC is compared in the total recoverable form to the most stringent applicable criterion. The MEC of 1 ug/l is less than the applicable criterion of 5 ug/l. Accordingly, the first test has not established reasonable potential for selenium. The second test cannot be evaluated until ambient background concentration data is obtained.

ANALYSIS OF TECHNICAL ISSUES

In requesting assistance for analysis of concerns raised by petitioners, OCC has identified specific technical issues for review (printed in italics). The Division of Water Quality's analysis immediately follows each issue.

District and Bay Area Dischargers Association Petitions

1. Mercury and dioxin interim mass limits:

a. The Regional Board limited mercury and dioxin based on the narrative toxicity objective in its Basin Plan. The Regional Board's response to the petitions indicates that there are no relevant ambient background data for mercury and dioxin. In addition, these pollutants are not identified on the Clean Water Act 303(d) list as impairing the Napa River. It appears that the Regional Board concluded that the river lacked assimilative capacity based on the fact that the river is tributary to San Pablo Bay which is impaired for the pollutants of concern. Analyze whether the Regional Board's conclusions regarding assimilative capacity for mercury and dioxin are technically justified.

Assimilative capacity generally means the ability of a receiving water to mix with (dilute) a mass load rate from a pollutant source (e.g., point source discharge) and result in a water column concentration that does not exceed applicable criteria/objectives. Assimilative capacity will not exist if the ambient background concentration, before mixing with a point source discharge, exceeds applicable criteria/objectives. Ambient background concentration from a data set is determined by the State Board's Policy. State Board Order WQ 2001-06 (petitions of Tosco Corporation, et al.) held that a Regional Board cannot rely solely on a CWA Section 303(d) listing as the basis for concluding that a receiving water lacks assimilative capacity for an impairing pollutant. Likewise, assimilative capacity does not necessarily exist for a pollutant if it is not 303(d)-listed, and the Regional Board is under no obligation to grant a dilution credit for any or all pollutants. Rather, the Regional Board must base assimilative capacity determinations on the relevant water quality-related data. In the matter of Tosco, the subject discharges were within 303(d)-listed water bodies. Accordingly, determinations can be made that assimilative capacity may exist locally to a discharge within a listed water body. The listing itself does not account for local variations within the listed segment, seasonal variations, or improved conditions of the water body since the time it was listed. It follows all the more that such assimilative capacity determinations can be made in unlisted water bodies that are tributary to a listed water body.

In the case of the District's permit, the point of discharge is approximately 14-miles upstream and remote from the 303(d)-listed water body (San Pablo Bay). Assimilative capacity at the point of discharge in the Napa River can only be determined after ambient background concentration data is submitted in response to a request for the data from the Regional Board. Such a request is authorized by the State Board's Policy. Pursuant to Finding 42.c of the permit, Provision 22 provides the opportunity to reopen the permit in the event additional reasonable potential is demonstrated by future analysis of information gained by ambient background

concentration data. Therefore, the Regional Board conclusions are not justified with regard to assimilative capacity at the point of discharge. Additional discussion to this issue follows in response to other questions.

b. Does the administrative record include data on the fate and transport of pollutants discharged by the District and their impact on San Pablo Bay water quality?

The administrative record does not provide an account of the fate and transport of pollutants discharged by the District. The record itself is limited to the description of the nature and characteristics of the discharge and effluent water quality data. As previously mentioned, ambient background data for the Napa River at the discharge is not contained in the administrative record.

Some considerations can be given to the relative quality of existing effluent data. For mercury, all effluent samples were reported with method detection limits below the water quality objective of 0.025 ug/l, and the majority of samples were reported with method detection limits below the "desirable" Gold Book Objective of 0.012 ug/l. The MEC determined by State Board Policy methods was 0.01 ug/l from the only sample with a detectable concentration. As previously discussed, both objectives were developed from bioconcentration factors in aquatic life; therefore, there is a relationship between toxicity in fish tissue and protective objectives for the water column.

For mercury, if ambient background concentration data from the Napa River show that assimilative capacity exists at the discharge, the resultant mix with the discharge will be at levels not exceeding applicable criteria. However, historical performance must be maintained by the facility expansion without backsliding. If ambient background concentrations show that assimilative capacity does not exist, then water quality-based effluent limitations would be required by the State Board Policy and no dilution credit for mercury limitations would be provided. In the latter case, end-of-pipe effluent limitations would contribute to achievement of water quality standards in the Napa River at the point of discharge. In either case, the effect of a discharge consistently at levels below applicable criteria/objectives may improve the water column concentration of downstream receiving waters when they are at levels above applicable criteria/objectives. The discharge, even though it may carry an incidental load, may provide some dilution to the water column of San Pablo Bay, depending on relative concentrations. As decided in the matter of Tosco, a discharge having "no net load" is desirable, but it is not an absolute requirement.

Four dioxin/furan congeners were detected in some samples of the effluent. Clarification should be made from laboratory data if a fifth congener (1,2,3,7,8-PeCDD) was detected in the sample collected on March 17, 1988. The Regional Board evaluated these congeners by applying TEFs, although no promulgated criteria are applicable at this time. The dioxin congener 2,3,7,8-TCDD has applicable CTR criteria and it is important that confirmation be provided that all samples were at less than detectable levels as shown in the District's memorandum dated March 27, 2000. However, it is not possible to make further evaluations of the effects of 2,3,7,8-TCDD on San Pablo Bay from the discharge using the administrative record alone because the method detection limits were much higher than applicable criteria.

c. Are there Regional Monitoring Program (RMP) stations at the Napa River mouth, and if so, do the data show impairment due to mercury and dioxins?

Information from the RMP is not included in the administrative record. The San Francisco Estuary Institute (SFEI) manages the RMP. Data collected under the RMP by SFEI is normally available to Regional Board staff and the general public from the Internet. However, RMP data has not been recently available through Internet access. Accordingly, information for this report is limited to the hard copy of the 1997 Annual Report on file at the State Board.

There are RMP stations in the upper reaches of San Pablo Bay near Davis Point (Station BD40) and in the lower segment of the Napa River where it traverses Mare Island Strait (Station BD50). The District's discharge is about 14 miles upstream of the mouth of the Napa River at San Pablo Bay. Mercury data has been collected at both stations for the water column, sediment, and by valve tissue (see Tables 2, 3, 12, and 18 attached). Dioxin/furan congener data was not included in the 1997 Annual Report.

Table 3 of the 1997 Annual Report indicates that the Napa River (Station BD50) had a relatively high presence of mercury (0.0708 ug/l) in the water column during January 1997 compared to other monitoring stations throughout the San Francisco Bay estuary. In comparison, the applicable water quality objectives are 0.025 ug/l as a 4-day average and either 2.1 ug/l or 2.4 ug/l as a 1-hour average, depending on salinity determinations in Mare Island Strait. However, other riverine tributaries to the Bay tended to also be relatively high in the same monitoring period. Mercury in sediments (Table 12) during the same monitoring period were moderate compared to other stations. Mercury from bivalve tissue (Table 18) at the Napa Station during September 1997 was nearly the highest of all stations (0.526 mg/kg) during that monitoring period. It is not possible to determine from the tables if the source of high levels in the water column or by valve tissue can be attributed to sources upstream from Mare Island Strait. This information is solely for the purposes of providing a cursory comparison with other Bay monitoring stations.

d. Analyze whether the District's mercury and dioxin discharges had the "reasonable potential" to cause or contribute to a water quality standards violation. Specifically for mercury, would the discharge have reasonable potential if the basin plan freshwater objective of 0.025 ug/l as a 4-day average was used?

Under the first test of reasonable potential for mercury, the MEC of 0.01 ug/l is less than the applicable objective of 0.025 ug/l. Likewise, the MEC of 0.01 ug/l is less than a desirable objective of 0.012 ug/l. Accordingly, the first test has not established reasonable potential for mercury. The second test cannot be evaluated until ambient background concentration data is obtained. Efforts should be underway by the Regional Board to require the District to collect appropriate data as required by the Policy.

Since 2,3,7,8-TCDD was not detected in any of the effluent samples and all of the reported detection limits are greater than the applicable criterion of 1.4 EE-08 ug/l, reasonable potential is not established by the first test in the Policy. The second test cannot be evaluated until ambient

background concentration data is obtained. If analysis for the second test eventually establishes reasonable potential, water quality-based effluent limitations will be required. However, at this time the results of the analysis for the first test require the Regional Board to establish interim requirements in accordance with section 2.2.2 of the Policy, which requires additional monitoring for 2,3,7,8-TCDD in place of a water quality-based effluent limitation. Section 1.3 of the Policy requires this when all reported detection limits of the pollutant in the effluent are greater than the most stringent applicable criterion/objective.

There is additional discretion for the Regional Board to consider if other factors contribute to a need for water quality-based effluent limitations. The most considerable factor is San Pablo Bay being 303(d)-listed for mercury and dioxin/furan congener impairment. As discussed, it appears the District's discharge may at times provide some dilution to mercury in the water column of San Pablo Bay if historical performance is maintained (no backsliding). Evidence at hand from effluent concentrations indicate that the discharge has not been at concentrations high enough to cause or contribute to excursions above applicable water quality objectives in the water column of San Pablo Bay. The same cannot be verified for dioxin/furan congeners.

The list of other information that the Regional Board may review to determine if reasonable potential exists (Policy Section 1.3, Step 7) is not limited, and it appears that discretion to weigh various factors may be liberally construed. Authority seems to exist for the Regional Board to consider any known information regarding the relative contribution of mercury and dioxin/furan congener loads from the discharge compared to other known source loads to San Pablo Bay. The District's discharge is considered a major discharge, and it should have undergone a significant change in treatment processes due to the 2001 plant expansion. However, the mass flux to San Pablo Bay due to tidal action and flows from Carquinez Strait should be appreciable. Discretion should exist for the Regional Board to determine if changes to the District's discharge would be significant enough to cause any detrimental changes to the greater mass of San Pablo Bay. If the relative contributions from the discharge are significant and the District is anticipated to receive a wasteload allocation under any TMDL, ongoing monitoring to accompany any interim effluent limitations would be beneficial to help establish the allocations. Further, the Policy (Section 2.1.1) suggests that for bioaccumulative priority pollutants for which the receiving water has been included on the 303(d) list, the Regional Board should consider whether the mass loading of the bioaccumulative pollutants should be limited to representative, current levels pending TMDL development.

e. Explain how the interim mass limits were calculated and how those limits compare to current performance. Do the limits allow some increase in mass emissions over current levels?

Interim mass triggers and limit development calculations for mercury are shown on fact sheet pages 42 and 43. Some basic concepts were used in the calculations for mercury. The first concept is that a mercury mass load rate (e.g., grams/day or kilograms/month) was estimated for a given monitoring period by multiplying the concentration by the average flow during the monitoring period and applying appropriate conversion factors. In performing this calculation, the Regional Board chose to use reported detection limits (occurring in 20 of 21 samples) to represent the concentration whenever there was no detectable concentration. Accordingly, the

primary concern in San Pablo Bay. However, copper is not identified as being bioaccumulative and concentration limitations are the appropriate means to satisfy standards that are based on shorter exposures. The data sheets indicate that only one detectable concentration of copper from 21 samples exceeded the applicable criteria. The majority of other samples were at less than detectable concentrations and below applicable criteria. Accordingly, loads associated with such effluent are of little consequence at those times and the effluent may actually help to dilute any receiving water that is above applicable criteria.

8. Reasonable potential for diazinon and selenium:

a. Did the Regional Board correctly determine that there was no reasonable potential for diazinon and selenium?

BayKeeper claims that diazinon and chlorpyrifos were detected in all nine of nine participating Bay area publicly owned treatment works. This information lacks credible evidence to substantiate that reasonable potential exists for these constituents in the District's discharge. BayKeeper has not described the nature and merits of the study, the extent of the District's participation in the study, relevant data, and criteria/objectives that are appropriate to implement the narrative standard. There are no criteria promulgated by the CTR or applicable objectives from the Basin Plan. Since diazinon and chlorpyrifos are not priority pollutants, Policy methods for reasonable potential analysis are not necessarily applicable. Nevertheless, the Self-Monitoring Program for the permit requires the District to monitor its effluent for these constituents twice a year for three years. If any subsequent analysis of the data indicates that reasonable potential exists based on effluent data, the permit could be reopened to include effluent limitations. Ambient background monitoring for these constituents is not required by the Self-Monitoring Program or by the Policy for non-priority pollutants, so Policy methods to complete analysis of reasonable potential using such data are not necessarily applicable.

The most stringent applicable water quality criterion for reasonable potential analysis of selenium is 5 ug/l as a 4-day average. This applicable criterion is from Column B2 of the CTR table for protection of aquatic life in freshwater and was promulgated in the NTR for certain water bodies including the San Francisco Bay estuary.

The MEC for selenium is 1 ug/l using Policy methodology based on data in the fact sheet (page 28 of 44). All samples for selenium in the effluent had no detectable concentrations, ranging from <1 to <1.2 ug/l. No conversion factors are applicable from 40 CFR 131.38(b)(2) for selenium freshwater criteria. The selenium MEC is compared in the total recoverable form to the most stringent applicable criterion. The MEC of 1 ug/l is less than the applicable criterion of 5 ug/l. Accordingly, the first test has not established reasonable potential for selenium. The second test cannot be evaluated until ambient background concentration data are obtained. Similar to the reasonable potential status and 303(d) issues for mercury, there is additional discretion for the Regional Board to consider if other factors contribute to a need for water quality-based effluent limitations.

The permit is designed with both wet season effluent limitations and dry season effluent limitations. No available dilution exists in the dry season from May 1 through October 31. Dry season limitations have been developed because the District has historically needed to discharge in the dry season under emergency conditions due in part to limited stabilization pond capacity. The Regional Board anticipates that the District will need to discharge in future emergency conditions during the dry season. The Regional Board's response to the petition indicates that the additional monitoring information is needed to determine the effectiveness of the tertiary system that is in place during the dry season. The response further indicates that dry season monitoring is absolutely necessary to ensure compliance with the more stringent dry season effluent limitations.

The response focuses on monitoring needs for compliance and effectiveness monitoring. These uses of monitoring information from receiving water stations (CC-1, 2, 4, and 5) are of value only when a discharge is occurring. Monitoring from the effluent discharge station E-001 can only be obtained when there is a discharge. The Regional Board is apparently not using the information for any future effluent limitation development for the dry season. Otherwise, additional pertinent information to develop effluent limitations such as salinity, hardness, and ambient background concentration of priority pollutants during the summer season would also be needed. Accordingly, there appears no justified benefit to the requested data from receiving water stations for times when there is no emergency dry season discharge. Unless additional justification is provided, it appears that footnote 2 to Table 1 of the Self-Monitoring Program be amended to require sampling only during periods when discharge is being made to the Napa River similar to the previous permit.

San Francisco BayKeeper Petition

7. Reduced mass limits to offset City of American Canyon treatment plant flows:

a. Should the permit have provided for reduced mass loading of pollutants, other than mercury, to reflect the loads permitted from the City of American Canyon plant?

The permit currently includes mass load offsets for mercury and four dioxin/furan congeners. With the exception of copper, reasonable potential has not been determined to exist for any other 303(d)-listed pollutant for San Pablo Bay based on the first test using effluent data. The Napa River is not 303(d)-listed for any priority pollutant. The Regional Board should complete reasonable potential analysis for 303(d)-listed pollutants using ambient background concentration data when it is obtained. Mass load limitations (and any related offsets) are not required for pollutants that do not require water quality-based effluent limitations. Further, the Regional Board reasons that mass limits are not necessary for other impairing pollutants since they are not bioaccumulative, they do not have detection limits low enough to make mass limitations meaningful, or they have not been detected in the effluent, and therefore they do not have reasonable potential.

Mercury and dioxin/furan congeners are bioaccumulative and the Regional Board has developed mass limitations and offsets by that distinction since long-term exposure to their loads are the

Inflow: 38.277 mgd/100,613 people = 380 gallons/capita–day (greater than 275)
Infiltration: 19.04 mgd/100,613 people = 189 gallons/capita–day (greater than 120)

The District presented other calculations that indicated the thresholds for I/I were satisfied. However, the District's calculations averaged inflows from storm events that peaked during February 6 and 7, 1999, while Regional Board staff simply used the maximum inflow from February 7, 1999 (see administrative record Tab 6A, Supplemental Information, May 2000). The District also used a maximum monthly flow to calculate infiltration while Regional Board staff used the maximum daily flow from April 1999 (see administrative record Tab 6A, e-mail dated May 3, 2000). In both cases, Regional Board staff's selection of flows is most appropriate to indicate if there is excessive I/I. The District provided the population of 100,613 that is used in the above calculations. It was determined from Association of Bay Area Governments data by subtracting populations associated with four communities that are served by other treatment plants from a countywide population figure. That basis for the population figure does not appear to account for populations from rural areas or other small communities within Napa County that are not served by the District, especially those outside Napa Valley. A population of 70,000 based on Finding 5 of the permit (or 68,000 based on the permit application) would result in larger calculated values for I/I. Clearly, both inflow and infiltration are excessive, according to the definitions in the CFRs.

'Excessive infiltration/inflow' in 40 CFR 35.2005 (b)(16) is defined as "The quantities of infiltration/inflow which can be economically eliminated from a sewer system as determined in a cost-effectiveness analysis that compares the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow."
The District did not provide a cost-effectiveness analysis to support their request for an exception to the 85 percent removal requirement. The District stated they have worked to reduce I/I in the past, and they were committing $3 million beginning in July 2000 to address I/I problems. The Regional Board has offered to reevaluate the appropriateness of an exception to the 85 percent removal requirement after the I/I reduction projects that the District is currently committed to have been completed. Committing money to reduce I/I is not a cost-effectiveness analysis.

Had the District provided an adequate analysis showing that it is not cost-effective to eliminate the excessive I/I, the Regional Board would have had justification for the percent removal exception. In the absence of the required analysis, the Regional Board had no choice but to disallow the exception in accordance with the federal regulations.

6. Year-round sampling requirement:

a. The District objects to a requirement that the discharger perform year-round sampling. The District generally discharges only during the wet season. The District contends that the Regional Board cannot require sampling at location E-001 when there is no flow. Was the year-round sampling requirement appropriate?

The MEC of 2 ug/l is greater than the applicable criteria of 1 ug/l. Since cyanide was not detected in any of the effluent samples and all of the reported detection limits are greater than the applicable criterion of 1 ug/l, reasonable potential is not established by the first test in the Policy. Accordingly, the Regional Board's determination that there is reasonable potential by the first test was unnecessary based on straightforward use of the Policy. The second test cannot be evaluated until ambient background concentration data is obtained. If analysis for the second test eventually establishes reasonable potential, water quality-based effluent limitations will be required. However, at this time the results of the analysis for the first test require the Regional Board to establish interim requirements in accordance with section 2.2.2 of the Policy, which requires additional monitoring for cyanide in place of a water quality-based effluent limitation. Section 1.3 of the Policy requires this when all reported detection limits of the pollutant in the effluent are greater than the most stringent applicable criterion/objective.

b. Did the Regional Board correctly implement the Policy in adopting the interim cyanide limit?

The previous permit contained a wet season cyanide limit of 25 ug/l as a daily average and a dry season cyanide limit of 5 ug/l as a daily average. Apart from the Regional Board's analysis described in the current permit, reasonable potential has not been established based on the analysis in this report. The current permit includes interim performance-based cyanide limitations that are more stringent than the previous permit. However, the Regional Board may consider maintaining effluent limitations from the previous permit if deemed necessary to prevent backsliding.

5. Percent removal of BOD and TSS:

a. Did the Regional Board act properly in denying the District's request for an exception from the 85% removal requirement for BOD and TSS?

The standard requirement on percentage removal for BOD and TSS is 85 percent. The federal regulations allow a lower percent removal if the influent is dilute; however, this exception applies only if the dilute influent is not the result of excessive inflow and infiltration (I/I) (40 CFR 133.103 (d)). Two other criteria apply, but the Regional Board agreed that the District had met these criteria.

Nonexcessive infiltration in 40 CFR 35.2005 (b)(28) is defined as "The quantity of flow which is less than 120 gallons per capita per day (domestic base flow and infiltration) or the quantity of infiltration which cannot be economically and effectively eliminated from a sewer system as determined in a cost-effectiveness analysis." Nonexcessive inflow in 40 CFR 35.2005 (b)(29) is defined as "The maximum total flow rate during storm events which does not result in chronic operational problems related to hydraulic overloading of the treatment works or which does not result in a total flow of more than 275 gallons per capita per day (domestic base flow plus infiltration plus inflow)."

Regional Board staff analyzed available data to determine if the District had excessive I/I. Their calculations are reproduced below:

obtained. Efforts should be underway by the Regional Board to require the District as well as other dischargers to collect appropriate data as required by the Policy.

b. Do the data from the discharger's latest ultra-clean sampling and analysis techniques change any of the reasonable potential analysis conclusions?

The Regional Board issued letters on August 4, 1999 and October 22, 1999 (within administrative record, Tab 6A) concerning changes of requirements to use ultra-clean sampling and analytical methods for mercury monitoring. The first letter notified dischargers of requirements to use Method 1669 to improve the quality of data by decreasing the likelihood of sample contamination. The letter also notified dischargers of requirements to use Method 1631 for sample analysis by the laboratory which has a much lower detection limit, around 0.5 ng/l (0.0005 ug/l) compared to 200 ng/l (0.2 ug/l) of the traditional method used by most dischargers. The second letter postponed requirements to use the new methods until January 1, 2000. Based upon the mail distribution list attached to the letters, the District appears not to have been notified directly. However, this does not appear to be of issue within the administrative record. It is likely that any laboratory serving major dischargers to the Bay area would be aware of changes in requirements by the Regional Board.

All analysis of effluent data for reasonable potential was based on data spanning from January 1997 through December 1999. No laboratory data beyond December 1999 was submitted to the administrative record. Regardless, the MEC did not exceed applicable objectives, and the first test for reasonable potential based on effluent concentration data can be completed using data from the existing record. The new methods, however, should lower the range of samples that are without detectable concentrations above the "desirable" water quality objective of 0.012 ug/l.

c. Assuming that the interim, concentration-based limits are appropriate, was it appropriate to base the limits for mercury on the performance of the oxidation pond system?

Yes, for the same reasons described in response to issue 2.e.

4. Interim, concentration-based cyanide limit:

a. The discharger alleges that cyanide has not been detected in either the effluent or the receiving water. In addition, the discharger contends that the Regional Board failed to apply the cyanide water quality objective in its basin plan. Please analyze these contentions.

The most stringent applicable water quality criteria for reasonable potential analysis of cyanide are 1 ug/l as both a 4-day average and short period average. This applicable criterion is from Column C of the CTR table for protection of aquatic life in saltwater and was promulgated in the NTR for certain water bodies including the San Francisco Bay estuary. A previous discussion explains why these criteria prevail over less stringent Basin Plan objectives.

The MEC for cyanide is 2 ug/l using Policy methodology based on data in the fact sheet (page 28 of 44). All samples for cyanide have no detectable concentrations, ranging from <2 to <3.4 ug/l.

rate is far above critical receiving water flows (e.g., 1Q10 and 7Q10 for aquatic life) allowed for dilution ratios by Policy Section 1.4.2.1, Table 3. Additionally, problems associated with diminished flow in the Napa River due to frost protection diversions from March 15 to May 15 are codified in California Code of Regulations Title 23, Section 735(a). Finding 4.d of the previous permit acknowledged that the discharge does not consistently receive a minimum initial dilution of 10:1 during the wet season. Finally, the permit lacks definition of the mixing zone that is to be associated with the dilution credit. Accordingly, there is opportunity to perform mixing zone studies concurrently with the collection of ambient background data to develop final effluent limitations. Any dilution credit provided must satisfy Policy requirements.

e. Assuming that interim, concentration-based limits are appropriate, was it appropriate to base the limits for copper on the performance of the oxidation pond system?

Section 2.2.2 B requires interim limitations to be based on current treatment facility performance or on existing permit limitations, whichever is most stringent. Interim limitations are required when potentially more stringent water quality-based effluent limitations are necessary to achieve water quality standards. Accordingly, the emphasis to maintain current treatment facility performance is required so that there is no potential to backslide. The District fears that the expansion facility that relies primarily on the activated sludge process may not perform as well as the former treatment process which relied on stabilization ponds. The Policy does not provide flexibility for relaxation of performance when water quality-based effluent limitations are necessary.

3. Interim, concentration-based mercury limits:

a. The Napa River is not section 303(d)-listed for mercury. It is unclear to what extent the Regional Board had background data for this pollutant. Did the Regional Board correctly determine reasonable potential for mercury? If the basin plan water quality objective for mercury had been used, would the reasonable potential analysis have yielded the same results?

The selection of applicable criteria/objectives and analysis of reasonable potential for mercury was previously discussed in this report. The applicable water quality objective is 0.025 ug/l, but the Regional Board chose to evaluate 0.012 ug/l from the U.S. EPA Ambient Water Quality Criteria (Gold Book), apparently as a criterion to implement the narrative standard. The current Basin Plan and the 1986 Basin Plan reference 0.012 ug/l as a desirable criterion.

Under the first test for reasonable potential, the MEC of 0.01 ug/l is less than the applicable objective of 0.025 ug/l. Likewise, the MEC of 0.01 ug/l is less than a desirable objective of 0.012 ug/l. Accordingly, the first test has not established reasonable potential for mercury under straightforward methodology of the Policy. The Regional Board noted on page 27 of the fact sheet that the MEC was "close" to the lowest water quality objective and therefore established reasonable potential. Such a determination of reasonable potential is not required in such an instance. Ambient background concentration data was not available for the development of the permit. The second test cannot be evaluated until ambient background concentration data is

d. Did the Regional Water Board correctly implement the State Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries (2000) (Policy) in adopting these limits?

Section 2.2.2 B of the Policy requires the Regional Board to establish numeric interim limitations if there is insufficient data to calculate a final effluent limitation. In such cases, the Regional Board may establish other interim requirements such as requiring the discharger to implement pollutant minimization and/or source control measures and to participate in the activities necessary to develop final effluent limitations. Numeric interim limitations for the pollutant must be based on current treatment facility performance or on existing permit limitations, whichever is more stringent. For copper, it is likely that additional information will be required to establish the ambient background concentration to calculate a final effluent limitation. Additional information may be required to establish an appropriate dilution credit (further discussed herein) or at the District's option, a copper translator.

Interim limitation calculation sheets can be found near the end of Tab 6A of the administrative record. Generally for all interim limitation calculations, including calculations for copper, the Regional Board selected the most stringent of calculations related to facility performance or permit limitations from the previous permit. The Regional Board developed calculations for facility performance by two methods. In one method, the Regional Board developed an average concentration using both detectable concentrations and method detection limits. Using that average concentration, three standard deviations of the same data were added to develop the performance-based limitation as a daily maximum. In the other method, the Regional Board determined the upper range of the same data to apply with discretion as a daily maximum or monthly average. Generally, of the two performance-based methods, the most stringent was selected for comparison to previous permit limitations. The most stringent of the performance-based or previous permit limitation was selected as the interim limitation. If the interim limitation is performance-based, the Regional Board gave no credit for dilution during the wet season. Accordingly, the numerical basis of interim limitations, including interim limitations for copper, appears to satisfy Section 2.2.2 B. The interim limitation for copper is performance-based using the method based on average concentration plus three standard deviations from the data set. The Regional Board apparently rounded the value to match the upper range of observed concentrations and applied the interim copper limit as a daily maximum without credit for dilution.

Section 2.2.2 B of the Policy also requires certain information to be presented in the permit findings concerning the development of final effluent limitations. Finding 32 of the permit only mentions that (ambient) background data is not available to develop final limitations. The finding lacks a description of the schedule for development of final effluent limitations as required by Section 2.2.2 B. Section 2.2.2 of the Policy also provides that conducting a mixing zone study may be included in the justification for an interim schedule to collect data.

Finding 30 of the permit mentions that 10:1 dilution, assumed for deep-water discharges, will be used for calculation of effluent limitations for the wet season. However, the model ran by U.S. EPA that is mentioned in the finding (see administrative record, Tab 6C, e-mail dated March 2, 2000) used an average wet season flow of 417 cubic feet per second (cfs). Such a flow

standard deviations to establish a limit (at 0.57 mg/mo.), none of the historical mass load calculations would have exceeded such a limit. A similar analysis for calculations without American Canyon flows provides the same results. Similar to mercury, the Regional Board's decision to add three standard deviations appears to provide some incidental room for growth.

2. Interim, concentration-based copper limits:

a. Using the basin plan criteria for distinguishing fresh water versus marine, would the receiving waters be classified as fresh water, estuarine, or marine under the basin plan?

As described in a preceding analysis, the salinity data was less than 5 ppt more than 75 percent of the time at both the discharge and the RMP station for the Napa River. Based upon the Basin Plan salinity threshold, freshwater objectives would be the regulatory basis for permitting. However, wet season influences were prevailing in the data. The receiving water is tidally influenced and it supports estuarine beneficial uses. These are factors in the narrative for salinity delineation within the Basin Plan (page 4-13). Therefore, to the extent that Basin Plan aquatic life objectives from Tables 3-3 and 3-4 apply, effluent limitations are more appropriately developed from the more stringent of the marine or freshwater objectives.

b. Did the Regional Board select the correct California Toxic Rule criterion or water quality objective for its reasonable potential analysis?

The Regional Board selected the appropriate CTR criterion as discussed in a previous analysis. The most stringent criteria or objectives for copper are saltwater criteria from the CTR table, Column C. Accordingly, 3.1 ug/l as a 4-day average of dissolved copper (or 3.7 ug/l as a 4-day average of total recoverable copper) is the most stringent applicable criteria for purposes of reasonable potential analysis under the Policy.

The District cites in its petition that the Regional Board has historically used a water effects ratio (WER) of 1.7 and that it should be applied to saltwater objectives. The petition does not elaborate where such a WER has been used to demonstrate why such a WER would be applicable to the District's discharge to the Napa River. The Policy sets requirements for development of site-specific requirements to apply a WER. Scientifically defensible methods for development of the WER must be appropriate to the situation.

c. The Napa River is not section 303(d)-listed for copper. It is unclear to what extent the Regional Water Board had background data for this pollutant. Did the Regional Board correctly determine reasonable potential for copper?

Table 5 in the permit summarizes the Regional Board's determination of reasonable potential. The Regional Board appropriately selected the most stringent applicable criteria and properly applied applicable conversion factors from the CTR for reasonable potential analysis. Accordingly, reasonable potential exists for copper, as previously discussed.

to be the intent that the Regional Board will base compliance on any value beyond the actual mass based on the 12-month moving average. Accordingly, it appears that reference to the 99.87 percentile should be stricken from the compliance language. Additional improvements to the compliance language should be made concerning the treatment of samples reported at less than detectable concentrations (i.e., not detected).

A mass load limit has been developed for four dioxin/furan congeners (1,2,3,4,6,7,8-HpCDD, OCDD, 1,2,3,4,6,7,8-HpCDF, and OCDF) that have had detectable concentrations from six samples spanning from 1997 to 1999 (see fact sheet, page 44 attached). Another dioxin congener (1,2,3,7,8-PeCDD) was shown to have a detectable concentration on March 11, 1998 based on a data sheet (not paged) within Tab 6B of the administrative record, but has not been included in the limit development. It is important to clarify if 1,2,3,7,8-PeCDD was actually detected because its toxicity may be considered the same as 2,3,7,8-TCDD. As previously discussed, fact sheets and data sheets conflict as to the detection and concentration of 2,3,7,8-TCDD, the only congener to have applicable criteria from the CTR. All other congeners can be associated with TEFs from Table 4 of the Policy. However, TEFs are not promulgated factors to establish any applicable criteria under the Policy or the Basin Plan. If 2,3,7,8-TCDD or 1,2,3,7,8-PeCDD have actually been detected, it may be appropriate to include them in mass limit calculations.

Calculation of the dioxin/furan congener mass load limit was initiated by applying TEFs to both detectable concentrations and method detection limits shown on the data sheets for each of the four respective congeners. The sum of these values was taken as the estimate for toxic equivalency concentration for each of the six sample dates. The toxic equivalency concentration was multiplied by appropriate conversion factors and by the flow discharged to the Napa River during the relevant sampling period to obtain an estimated mass load for the period. No credit was given for use of reclaimed water. A corresponding calculation was developed for flows excluding 1 mgd associated with American Canyon, similar to the mercury calculations. Due to the limitation of data, 12-month moving averages were not possible to determine. The Regional Board simply averaged the estimated load rates and added three standard deviations of the estimated load rate calculation data to obtain the mass load limit. Compliance is based on reported concentrations and method detection limits reported for the four dioxin/furan congeners identified above.

Similar to mercury, the data set for the four congeners persists with over half the data at less than detectable concentrations. Accordingly, the limit has been assessed with a load that may not actually exist to such levels. Also similar to mercury, there are no factors included in the calculation to account for future growth except for the relatively high three standard deviations added to the average load calculation. Again, the Regional Board could have decided to add a different number of standard deviations to the average mass load. The average for the limit calculation was 0.21 milligrams/month (mg/mo.) and one standard deviation of the mass load values was 0.18 mg/mo. (for calculations including American Canyon flows). Individual mass load calculations for the monitoring period ranged from 0.07 to 0.55 mg/mo. If the Regional Board had chosen to add only one standard deviation to the average to establish a limit (at 0.39 mg/mo.), only one of six historical mass load calculations would have exceeded such a limit based on data shown on page 44 of the fact sheet. If the Regional Board had chosen to add two

each value in the 12-month period. The effect of the cells with zero entries is to result in a trigger that is much lower than the limit. If both calculation sheets treated zero discharge the same way, the trigger would be much closer to the limit. However, the compliance determination in the permit (B.iii.c.) does not distinguish which of these two ways that zero discharge flow shall be treated in the calculation, and clarification should be provided.

Second, the mercury concentrations for March 1997 and December 1997 on the calculation sheets differ from the data on fact sheet page 26. The difference in the December 1997 concentration is significant (0.0001 mg/l or 0.1 ug/l from fact sheet page 26 vs. 0.012 ug/l on sheet pages 42 and 43). If the data sheet is correct, the interim mass limits and triggers would be several factors higher and should be corrected if necessary. Marked-up copies of fact sheet pages 42 and 43 are attached, showing potential corrections to the calculations.

The calculations for the mercury interim mass trigger and limit do not include any factors to purposely account for future growth associated with higher inflow from the City of Napa service area. Room for growth generally lies in how relatively stringent or lenient are the mass trigger and limit. For example, the calculation for the limit, as previously explained, is essentially the average of the 12-month moving average plus three standard deviations of the moving average calculation data. The Regional Board could have decided to add a different number of standard deviations to the average. The average of the moving average for the limit calculation was 0.629 grams/day (g/d) and one standard deviation of the moving average values was 0.082 g/d (for calculations including American Canyon flows). The individual moving average calculations ranged from 0.447 to 0.757 g/d. If the Regional Board had chosen to add only one standard deviation to the average to establish a limit (at 0.711 g/d), only four of 25 historical moving averages would have exceeded such a limit based on data shown on page 42 of the fact sheet. If the Regional Board had chosen to add two standard deviations to establish a limit (at 0.793 g/d), none of the historical moving averages would have exceeded such a limit. A similar analysis for calculations without American Canyon flows provides the same results. As it is, the Regional Board's decision to add three standard deviations appears to provide some incidental room for growth.

Further room for growth will be provided from mass determinations using more recent analytical Methods 1669 and 1631 for analysis of mercury. If historical performance is maintained, much lower method detection limits will be entered into the calculation of mass for compliance determination than were used in the development of the triggers and limits. If past analytical methods were used for compliance purposes, there could have been great cause for concern if a series of relatively high method detection limits were reported, making subsequent calculations of mass load to appear excessive at no fault of the District.

Clarifications should also be provided to the compliance language in the permit for both mercury and dioxin (see permit B.iii.c and B.iii.e). Both sections reference the 99.87 percentile of the mass emission rate. However, it appears that the interim triggers and limits are based on this same percentile (see permit B.iii.a, B.iii.b, and B.iii.d). However, by comparison to the calculation sheets, it is apparent that this percentile is the Regional Board's estimate of the value determined by the 12-month moving average plus three standard deviations. It does not appear

limit has been assessed with a load that may not actually exist to such levels. The second concept was to develop a moving average of estimated mass load rates from a "moving" 12-month period. For example, the column marked "MA" (moving average) shows, after 12-months of data, an average mass load rate for that period. Consequently, a 12-month average mass load rate is calculated for each subsequent 12-month period to develop a "moving" average. The third concept was to average the moving averages and to add three standard deviations of that data to establish a mass load trigger or mass load limit.

The interim mass triggers and limits for times when the City of American Canyon will no longer divert wastewater to the District are based on a subtraction of 1 million gallons/day (mgd) from each individual calculation. There is no explanation of the basis for this flow rate in the fact sheet. Finding 5 indicates that the facility serves a population of 10,000 people (or 8,000 people per the permit application) from the City of American Canyon compared to 70,000 people served from the City of Napa. The average total flow (discharged and reclaimed) from January 1997 to December 1999 was 10.34 mgd based on flow data from the calculation sheets. If the City of Napa's business and industrial uses outweigh those of the City of American Canyon, the 1 mgd estimate seems reasonable based on population proportions. However, if the City of American Canyon receives the differences in the mass triggers and limits in any separate NPDES permit based on the calculation sheets, there may be merit in confirming their flow contribution to avoid any argument between the two dischargers.

The interim mass trigger for mercury is calculated using monthly average flows that are actually discharged to the Napa River. Thus, it is essentially a reflection of past performance with an allowance built into the calculations (three standard deviations) that well-encompasses performance variability. The interim mass limit for mercury is calculated using monthly average flows discharged to the Napa River with an incidental credit built into the calculations by adding monthly average flows of reclaimed water. The interim mass limit likewise has an allowance built into the calculations (three standard deviations) that well-encompasses performance variability. The credit was provided for only 11 months of 26 months when reclaimed water was being used. No credit was provided for months of relatively high use of reclaimed water. At such times a mercury sample was not taken because a discharge was not authorized to the Napa River and a load rate could not be calculated. Credit was only provided for months when a discharge was authorized and a mercury sample was taken at the discharge. In those months there tended to be a relatively low use of reclaimed water.

Two significant anomalies in the calculations must be addressed which have significant impacts to the interim mass triggers and limits for mercury. First, there is a great difference how interim mass limits and interim mass triggers were calculated that is unexplained in the fact sheets. The interim mass limit calculation (fact sheet, page 42) has blank cells in the spreadsheet column for estimated mass corresponding to any monthly period when there was no discharge to the Napa River. The moving average calculation for the limit ignores those blank cells and determines moving average mass based only on those months that are represented by a non-zero mass estimate within the moving 12-month period. The interim mass trigger calculation (fact sheet, page 43) has zero entries in cells for estimated mass corresponding to any monthly period when there was no discharge to the Napa River. The moving average calculation for the trigger does not ignore the cells with zero entries and determines moving average mass based on